Republic of Uganda

EDICT OF GOVERNMENT

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UGANDA STANDARD

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Code of practice—Inspection of road vehicles for roadworthiness

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Foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Tourism, Trade and Industry established by the Act of Parliament of 1983, of the Laws of Uganda. UNBS is mandated to co-ordinate the elaboration of standards and is

(a) a member of International Organisation for Standardisation (ISO) and

(b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and

(c) the National Enquiry Point on TBT/SPS Agreements of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

Committee membership

- Automobile Association of Uganda (AAU)
- Uganda Police; Inspectorate of vehicles (IOV)
- Ministry of works housing and Communication (MOWHC)
- Makerere University
- Kyambogo University
- Uganda Motor Industry Association (UMIA)
- National Environmental Management Authority (NEMA)
- SDV Transami
- Uganda National Bureau of Standards (UNBS)

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Introduction

This code of practice is intended to assist in the implementation of a uniform vehicle inspection system throughout the whole country through harmonising of inspection procedures before the privatisation of the whole system. Secondly the standard also is dedicated to trying to emphasise the issue of safety for all road users in relation to the condition of the vehicles plying the roads of this country.

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Code of practice — Inspection of road vehicles for roadworthiness

1 Scope

This code of practice specifies general, safety and environmental requirements for Road Vehicles and also includes inspection schedule for Road Vehicles.

2 Normative references

ISO 3833 Road vehicles - Types, terms and definitions.

Traffic and Road Safety Act and regulations of Uganda.

US 513: Specification for new pneumatic tyres — passenger Cars

US 514: Specification for new pneumatic tyres — Trucks and Buses

US 515: Specification for new pneumatic tyres — Light Trucks

US 516: Specification for new pneumatic tyres — Agricultural Implements

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 acceptable

in relation to equipment used, acceptable to the appointed inspecting authority

3.2 bus

a motor vehicle designed or adapted for the conveyance of more than 16 persons, including the driver

3.3 bus-train

a bus that

consists of two sections connected to form a unit,

can swivel in a horizontal plane at the connection between such sections,

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is designed or adapted solely or principally for the conveyance of the driver and at least 100 other persons, and

has a continuous passageway over its length

3.4 convention

the International Convention relative to Motor Traffic (Paris, 1926), the United Nations Convention on Road Traffic (Geneva, 1949) or the United Nations Convention on Road Traffic (Vienna, 1968), and any subsequent related convention ratified by the Government of Uganda, whichever convention is applicable to a prescribed territory and to the government, and any amendment thereof

3.5 inspector

an inspector of vehicles, registered and appointed in terms of the Traffic and Road Safety Act 1998.

3.6 excessive

excessive in the opinion of the inspector, taking due cognisance of the manufacture's specifications, where available.

3.7 heavy vehicle

a goods vehicle or a bus of gross vehicle mass exceeding 3 500 kg, or any other vehicle of tare mass exceeding 3 500 kg

3.8 inspectorate authority

an organisation appointed as such by the relevant government minister, or in accordance with the laws of any province

3.9 light motor vehicle

a motor vehicle that is

a) a motorcar, or

b) a bus, minibus or goods vehicle of gross vehicle mass not exceeding 3 500 kg, or

c) any other motor vehicle (other than a motorcycle, a motorcycle with sidecar, a motor tricycle or a motor quadrucycle) of tare mass not exceeding 3 500 kg

3.10 minibus

a motor vehicle designed or adapted solely or principally for the conveyance of more than 9 but not more than 16 persons, including the driver

3.11 motorcycle

a motor vehicle that has two wheels, including any such vehicle that has a sidecar attached

3.12 motor quadrucycle

a motor vehicle other than a tractor, that has four wheels and that is designed to be driven by means of the type of controls usually fitted to a motorcycle

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3.13 motor tricycle

a motor vehicle, other than a motorcycle or a tractor, that has three wheels and that is designed to be driven by means of the type of controls usually fitted to a motorcycle

3.14 rear underrun protection device

structure that is designed to prevent a vehicle from riding in underneath the motor vehicle to which the structure is fitted

3.15 roadworthy

descriptive of a vehicle that complies with the relevant provisions of the Traffic and Road Safety Act or this standard, and that is otherwise in a fit condition to be operated on a public road

3.16 schoolbus

bus or minibus owned by or contracted to a school and used principally for the conveyance of school children and other persons associated with the school

3.17 tractor

is a self-propelled road vehicle which is not constructed itself to carry a load other than such is necessary for its propulsion and equipment but which is constructed or adapted for the purpose of drawing or propelling a vehicle.

4 Inspection procedure

The clauses in this standard fall generally into the following groups:

5.1 to 5.15 - Inspection around the vehicle (external inspection)
5.16 to 5.35 - Inspection of the passenger compartment or driver's compartment
5.36 to 5.50 - Inspection using a pit/hoist
5.51 to 5.56 - Wheel alignment and braking
5.57 - Dimensions
5.58 to 5.61 - Lighting and reflectors
5.62 to 5.64 - Safety design
6.1 to 6.12 and clause 7 - Additional rejection criteria and inspection record for buses
8.1 to 8.6 and clause 9 - Additional rejection criteria and inspection record for minibuses

4.1 Facilities

Inspection of vehicles shall be carried out with the use of appropriate equipment, personnel and facilities that comply with the provisions of this standard and existing traffic and road safety regulations.

In the case of a vehicle that cannot be inspected at a vehicle inspection station because of the vehicle's dimensions, configuration or mass or because its speed capability is less than 15 km/h (for example tractors and certain roadmarking, earthmoving, excavation, construction and loading machinery), the vehicle may be tested on site. This on-site inspection has to be by prior arrangement with the management of the vehicle inspection station, subject to the availability of manpower. On completion of the inspection, the vehicle inspection station shall keep a record of the inspection. In addition to the requirements of 4.4, the inspection record shall state the inspection site and any deviation from the technical procedures laid down by this standard.

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In the case of adapted vehicles for the disabled (AVD) exceptions in respect of this code may be allowed, at the discretion of the inspector, in the case of driving controls. The road test may be carried out by the disabled driver in the company of the inspector.

4.2 General requirements

4.2.1 All pre-registered vehicles should have a certificate of roadworthiness from the country of origin.

4.2.2 All road vehicles shall be subjected to periodic inspection by the Uganda government, approved vehicle inspection centre or any other authorised and accredited vehicle inspection agent before registration according to table 10.

4.2.3 An authorised private body appointed by the Ministry of Works Housing and Communication shall certify equipment used in the inspection centres.

4.2.4 Personnel - Vehicle inspection personnel shall be authorised inspectors with the following minimum qualifications:

a) Diploma in motor vehicle engineering or craftsman certificate II or its equivalent

b) Experience of not less than 5 years in the motor Industry

c) Valid Driving Licence in accordance with the vehicle being inspected.

4.3 Left-hand drive vehicles shall not be accepted for registration, except with special permission from the relevant authority.

4.4 Cleanliness

The vehicle presented for an inspection and test shall be sufficiently clean so that all parts can be easily identified and inspected. Failure to comply with this provision will result in the rejection of the vehicle.

4.5 Identification

The inspector shall satisfy himself that the vehicle presented for inspection is the vehicle described in the application for inspection.

Identification particulars of a vehicle shall be obtained from the vehicle itself.

If any identification number has been obliterated, altered, defaced or does not correspond with the registration certificate or any other acceptable document, the inspector may discontinue the inspection and record on the inspection record that a clearance from the Uganda Police will be required before the inspection can be continued.

4.6 Inspection record

The vehicle inspector shall carry out the necessary inspections and tests to determine whether the vehicle has to be rejected or not in terms of clause 5, 6 or 8 (or a combination of these) and he shall record (in duplicate) his findings on an approved inspection record form.

In the case of buses and minibuses, the inspection record shall also include items that are only applicable to these vehicles in accordance to passenger service vehicle regulations. If the vehicle does not comply with the relevant items in this standard, the inspector shall state in the inspection record which items require attention. One copy of the inspection record shall be handed to the owner or person presenting the vehicle for inspection and a duplicate copy shall be filed for future reference.

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4.7 Certification of roadworthiness

If, after completing the inspection and tests required in terms of this standard, the inspector finds no cause for rejection, he shall issue, or authorize the issue of, a roadworthy certificate.

5 Rejection criteria for all vehicles

The vehicle shall be inspected and tested in regard to each provision of this standard, as relevant. The vehicle shall be deemed roadworthy in the absence of any listed defect; in accordance to 3.1 and 12.4.

5.1 Information and registration details

5.1.1 Registration Plates

In the case of a registered vehicle, reject if

a) the registration plates are not secure or are missing, or

b) the registration plates are so broken, cracked, discoloured, peeling, wrinkled or blistered that its legibility is affected or if they have sharp edges, or

c) there is a registration number, clearance certificate or permit or anything that does not apply to the vehicle, or

5.1.2 Information display

NOTE: If the vehicle is fitted with an information plate as mentioned in 5.1.3, the provisions of this subclause do not apply.

Reject if, in the case of a bus, a minibus or a goods vehicle, the following information is not marked (in kilograms) in the middle of the front left-hand side of the vehicle, in letters and figures of height at least 40 mm that are clearly legible at all times-.

a) the tare (T):

b) the permissible maximum vehicle weight (V);

c) when relevant, the permissible maximum drawing vehicle weight (D/T); and

d) number of passengers.

5.1.3 Information plates - General

Reject if, in the case of

- a bus, or a goods vehicle of gross vehicle mass exceeding 3 500 kg, or
- a minibus, bus or a goods vehicle of gross vehicle mass not exceeding 3 500 kg and does not have the manufacturer’s information plate untampered with and which may have the following information;

a) engine number, or

b) model year, or

c) chassis number.

NOTE 1: if any of the information is incorrect, or modifications to the vehicle have obviously affected the tare, the information given on the plate may have to be verified.

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NOTE 2: For assistance with calculations or checking on information plates, refer to the guidelines given in the Vehicle Examiner's Handbook

5.1.4 Information plates — Tractors that operate on a public road

Reject a tractor that operates on a public road if an information plate (similar to that described in 5.1.3) that shows the following is not affixed in a conspicuous and readily accessible position on a part not subject to replacement:

a) the maximum net engine power where applicable;

b) the gross combination mass (GCM/BKM); and

c) the permissible maximum drawing vehicle mass (D/T).

5.2 Smoke emission

Reject if, in the case of any type of engine, the exhaust smoke emission is so dense during a road test that its opacity measured is higher than the percentages below.

Model Year	**Opacity**
1991or newer	40 %
1974-1991	55%
1973 or older	70%

5.3 Road wheels and hubs

Reject if

a) the flanges or the tyre-retaining rings are fractured or cracked, or

b) any stud hole is excessively worn, or

c) any wheel stud, nut or bolt is loose or is missing, or

d) the ends of any tyre-retaining ring are butting, or

e) any wheel is excessively distorted (outside of the manufacturers specification), bent or cracked, or

f) any half-shaft bolt, nut or stud is loose or is missing, or

g) any part shows signs of having been repaired or modified by heating or welding, or

h) any balance weights are not secure and wheel alignment is not right , or

i) any interchangeable (quickly detachable) wheels have excessive backlash in their splines, or

j) on visual observation, any road wheel does not run reasonably true, or

k) when the front wheels are lifted off the ground and rocked at the top and bottom, a wheel has excessive movement, or

l) spoked wheels have loose, missing or broken spokes, or

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m) any wheel rim does not conform to the load and pressure tables of the relevant standards, or, in the case of motorcycles/tricycles/quadrucycles, to the manufacturers specification.

5.4 Size and type of tyres

Reject if

a) in accordance with the load and pressure tables given in US 513, US 514, US 515 and US 516 the wheel mass-loads of the tyres are less than required in relation to the maximum permissible axle or axle unit mass-load (A or AU/AE) and the permissible maximum vehicle mass (V) of the vehicle, or

b) one of the tyres of a dual wheel does not make ground contact when the vehicle is unladen on a flat surface, or

c) any tyre is of a different size or type (i.e. cross-ply or radial-ply) from any other type on the same axle, or

d) in the case of motorcycles/tricycles/quadrucycles, a tyre is clearly marked for off-road use only.

Warning - In cases where the information of a tyre is not given in the relevant part of Uganda Standards, consult the manufacturer of the tyre.

5.5 Condition of tyres

Reject if

a) a regrooved tyre is fitted to a wheel rim of diameter 430 mm (17 inches) or less, or has not been regrooved in a pattern similar to the original, or cords of a regrooved tyre are exposed, or

b) tyres on dual wheels, when correctly inflated, make wall contact owing to incorrect wheel fitment, or

c) a tyre sidewall has a break in the fabric or has a cut the length of which (in either case) exceeds 25 mm or 10 % of the section width, whichever is the greater, and that is deep enough to reach the body cords, or

d) a tyre has a lump or bulge apparently caused by separation or partial failure of its structure, or shows any lifting of the tread rubber, or

e) the spacing of dual wheels is less than that recommended by the tyre manufacturer, or

f) a tyre has any portion of the ply or cord structure exposed, or

g) a tyre has a tread pattern the depth of which is not at least 1 mm deep over the full width of the tread (or in the case of motorcycles/tricycles/quadrucycles of engine capacity not exceeding 50 cc, at least 80 % of the full width of the tread) at any position on the tread or, in the case of a pneumatic tyre that contains tyre tread depth indicators, if the tread is level with the tyre tread depth indicator, or

NOTE: Tiebars are part of the design of the tyre. They are much higher than the tread-wear indicator. When the tyre has worn to such an extent that ,the surface of the tyre is level with the tiebar, the tyre is still roadworthy.

h) a tyre fouls any part of the vehicle under any conditions, or

i) a motorcycle/tricycle/quadrucycle is fitted with a retreaded tyre, or

j) in the case of different wear levels on the same axle.

5.6 Bumper bars, protective devices (bullbars), bonnets, roof carriers and similar fittings

Reject if

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a) a bumper bar, protective device, bonnet, roof carrier or similar fitting is not secure or has sharp edges that could cause injury, or

b) any lamp, retro-reflector or registration plate is obscured by the bumper bar or protective device, or

c) in the case of no bumper bar or protective device being fitted, there are sharp edges that could cause injury.

5.7 Wheel flaps

Reject if

a trailer with a GVM exceeding 3 500 kg or a bus or a goods vehicle with a GVM exceeding 7 500 kg is not fitted with wheel flaps that are in good condition.

5.8 Trailer coupling on drawing vehicle (tractor)

5.8.1 Drawbar eye or hook

Reject if

a) the drawbar eye or hook or the pin, where appropriate, is not secure, or is excessively distorted or excessively worn, or

b) the locking or safety devices are not in position or are not working correctly.

5.8.2 Fifth wheel coupling

Reject if

a) the fifth wheel assembly is not securely fitted to the chassis with the correct grade and number of fasteners, or

b) the safety rocking device is missing, inadequate, damaged or does not fit properly, or

c) any part is missing, broken, cracked, loose or excessively worn, or

d) the wear in the wheel jaw exceeds the limit when checked with an acceptable vernier gauge or fifth wheel jaw gauge, or

e) the fifth wheel coupling is not properly lubricated.

5.8.3 Towing bracket, coupling ball and towbar

Reject if

a) the towing bracket is loose, badly welded or, in the opinion of the examiner, incorrectly or not securely fitted to the drawing vehicle, or

b) the coupling ball has been welded or shows excessive wear, or

c) the towbar is loose, badly welded or, in the opinion of the examiner, incorrectly fitted to the drawing vehicle, or

d) any part is cracked, broken or incomplete, or

e) the anchorage points around the towbar location are bent or corroded, or

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f) when a tow hitch pin is fitted, there is no locking facility, or

g) in the case of a bus-train, the operator of the vehicle fails to produce a certificate to certify that he has separated the two parts of the bus-train and examined the ball coupling and has repaired, replaced or adjusted it, as necessary from a reputable garage.

5.9 Coupling on trailer

5.9.1 Trailer drawbar

Reject if

a) the coupling is distorted, fractured or loose, or

b) the safety devices are not fitted or are not working correctly, or

c) there is excessive wear on the drawbar coupling, bushes or buckles, or

d) the drawbar bolts or mounting bolts are missing or are not of the correct type, size and number, or

e) the drawbar length of any trailer, where such trailer has more than one axle, exceeds 2 m, provided that in the case of an underslung coupling, the drawbar may exceed 2 m, provided that the distance between the two vehicles does not exceed 2,5 m.

5.9.2 Semitrailer kingpin

If a trailer is coupled to a drawing vehicle when either vehicle is presented for inspection, and if the examiner suspects that there may be an excessive amount of wear in the kingpin or fifth wheel, the vehicles shall be separated before the examination is completed.

Reject if

a) the wear in the kingpin exceeds the limit when the kingpin is checked by using an acceptable kingpin and fifth wheel gauge, or

b) the attachment of the kingpin is not secure, or

c) any part is excessively worn, or

d) any mounting bolts are missing or are not of the correct type, number and size.

NOTE: It is the duty of the driver to clean the surfaces of the kingpin or fifth wheel for inspection.

5.9.3 Coupling socket

Reject if

a) the locking mechanism does not work correctly, or

b) the safety locking devices are missing or do not work correctly, or

c) the socket has been welded, or

d) there is excessive wear on the coupling or pins, or

e) any part is cracked, broken or incomplete.

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5.10 Trailer landing legs

Reject if

a) the landing legs do not operate correctly, or

b) the landing legs are not securely fixed to the chassis, or

c) any of the mounting bolts or cross-bearing members are damaged, cracked or missing.

In the case of a trailer that cannot be separated from its towing vehicle, a certificate issued by its manufacturer or authorised service agent shall be produced.

5.11 Pedestrian protection devices

5.11.1 Rear underrun protection devices

Reject if

a goods vehicle the gross vehicle mass of which exceeds 8 000kg or a trailer the gross vehicle mass of which exceeds 3 500 kg, is not fitted with rear underrun protection devices.

5.11.2 Side grills

Reject if

a goods vehicle with a gross vehicle weight of 8 tons or more is not fitted with, on both sides, with pedestrian protection side guards

5.12 Mudguards

Reject if a mudguard or other similar fitting

a) is not securely fixed or is excessively corroded, or

b) has a tear or jagged edge that could cause injury, or

c) is rubbing or there is a sign of rubbing on a tyre (including, in the case of a steering axle, when the wheels are on full lock).

5.13 Cabin mounting

Reject if

a) the cabin is not mounted securely on the chassis, or

b) a retention device or safety device on a tilt cabin is defective or excessively worn, or

c) air pipes, hydraulic pipes or electric cables are liable to become trapped or subjected to excessive stress.

5.14 Sidecar

Reject if

a) the sidecar is not properly secured to the chassis, or

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b) the condition of the sidecar adversely affects the safe operation of the vehicle, or

c) the sidecar is not capable of securing and containing a load, or

d) the sidecar is not positioned squarely on the chassis.

5.15 Motorcycle/tricycle/quadrucycle fittings

5.15.1 Non-essential projections

Examine the vehicle for non-essential projections and reject if there is any projection that has been caused by broken, damaged or dislodged rear-view mirror brackets, mudguards, footrests, stands, bolts, etc.

5.15.2 Security of fittings

Examine the vehicle for security of all fittings (including fairings, footrests, pillion seats, centre stands and side stands) and reject if any fitting is not securely and adequately attached to the vehicle.

5.15.3 Footrests

Examine the footrests and reject if any footrest is not fitted with a rubber or does not have a non-slip surface, for both the rider and passenger.

5.15.4 Mudguards

If a vehicle that was originally fitted with mudguards is not so equipped, reject it unless (when relevant) the body of the vehicle adequately serves the same purpose.

5.15.5 Stands

Check the centre stand (if fitted) and the side stand. Reject if either or both are not capable of supporting the vehicle safely.

5.15.6 Chain guards

Reject if a chain guard that was originally fitted to the vehicle is missing.

5.15.7 Sprocket cover

Reject if the sprocket cover is missing.

5.15.8 Self-closing throttle

Reject if the vehicle does not have a self-closing throttle.

5.15.9 Levers

Reject if any hand lever is damaged to the extent that its strength or efficiency is diminished.

5.16 Safety belts (restraints)

Inspect all motor vehicles for safety belts and their anchorages, and reject if

a) any motorcar does not have a safety belt fitted to each of the two front outboard seats, or

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b) any motorcar where the roof of that motorcar forms an integral part of the bodywork, has no harness belt or three-point belt fitted to each of the two front outboard seats, or

c) any motorcar where the roof of that motorcar does not form an integral part of the bodywork, has no safety belt fitted to each of the two front outboard seats, or

d) any motorcar or box-type construction vehicle that has only two rows of seats, excluding seating positions that have seats of the folding (tip-up), rearward facing or sideways facing type, has no lap belt or three-point belt fitted to each of the two rear outboard seats, or

e) any minibus, bus or goods vehicle of gross vehicle mass exceeding 2 500 kg,

1. does not have a safety belt fitted for the driver's seat; or

2. if the front seat has seating accommodation for other persons, does not have at least one safety belt fitted, or

(f) if any device is present that could be responsible for the introduction of slackness of the safety belt tension, or any safety belt

1. is frayed, split or torn, or

2. has a loose or defective buckle, or

3. is improperly installed, or its anchorages are damaged or defective to the extent that the effectiveness of the anchorage is reduced.

NOTE: Box-type construction vehicles that contain at least three rows of seats, including sideways facing seats, need only have seat belts fitted to the front seats.

5.17 Doors

Reject if

a) a door is jammed or so secured that it cannot be opened, or

b) a door will not remain securely closed, or

c) the hinges, catches or pillars of a door are loose to the extent that the door is not secure when closed, or

d) except in the case of official security vehicles, a door cannot be opened from both the inside and the outside, or

e) a safety catch is not functioning correctly, or

f) the driver's window winder or the driver's window winding mechanism (or both) are not in good working order.

5.18 Floor and steps

Reject if

a) the floor is not secure or is excessively rusted or holed, or

b) a step is loose, or is excessively rusted or has a jagged edge that could cause injury, or

c) anything is present that could interfere with the movements of the pedals.

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5.19 Seats (see also 6.4 and 8.4)

Reject if

a) the driving seat is in such a condition that it could cause the driver to lose control of the vehicle, or

b) any seat or bunk is not secure or is unsafe, or

c) in the case of a vehicle that has no body shell to enclose the passengers, there is no grab handle for each passenger, or

5.20 Mirrors

Reject if

a) less than 75 % of the width of an exterior rear-view mirror can be seen when one is standing at the rear of the vehicle in line with the appropriate outer edge of the body, or

b) any mirror or its mounting bracket is loose, or

c) any mirror is so cracked that vision is impaired, or so discoloured that vision is affected, or

d) any mirror has a loose reflective surface.

5.21 View to front and sides

Reject if the driver does not have a full and clear view to the front and sides when he is in the driving position.

5.22 Windows and windscreen (see also 6.5 and 8.5)

Reject if

a) the windscreen is so cracked, clouded or otherwise defective that the driver’s day view or night view is materially affected or obstructed, or

b) the windscreen cracks obscure the driver’s view in the control zone (The control zone runs from above the steering wheel to just under the sun visor with the sun visor down, and within the driver’s windscreen wiper sweep area.), or

c) the windscreen cracks have sharp edges, or

d) the window cracks restrict the driver's view in the outside rear-view mirror on the left-hand side, or

e) the glass is not permanently marked with the trade name or trade mark of the manufacturer, or the trade name of the glass, or

f) the glass is not clearly identifiable as safety glass, or

g) material other than glass is fitted as a windscreen, window or transparent partition, except that

   1. roof windows, and windows and partitions in sidecars, in buses and in passenger semitrailers may be of ultra-high-impact acrylic or polycarbonate plastics materials that are marked with the trade name or trade mark of the manufacturer or with the trade name of the material and with a permanent material identification mark, and

   2. flexible windows or partitions that fold away may be of plastic material, and

   3. windows in trailers and in caravans may be of ordinary acrylic or polycarbonate plastics materials, or

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h) the windscreen is so tinted that the visible light transmitted is less than 70 %, or

i) except in the case of a window in the roof, or frosted or white glass in ambulances or hearses, any other window apart from the windscreen is so tinted that the visible light transmitted is less than 35 %, or

j) a windscreen is so badly fitted or cracked that it is, in the opinion of the inspector, dangerous to the driver, or

k) any film or tinting material applied to any windscreen, window or partition is not free from bubbles, tears or scratches, or

l) any film or material with a textured surface or any fixture or attachment is positioned over or applied to a windscreen, window or partition in such a manner that its presence reduces visibility through such windscreen, window or partition in any direction.

5.23 Windscreen wipers (if a windscreen is fitted)

Reject if

a) the vehicle is not fitted with at least one windscreen wiper in front of the driver, that is capable of clearing the driver's view adequately, or

b) the wiper mechanism or the blade or the control is not sufficiently operational to ensure a clear view for the driver.

5.24 Speedometer

Reject if

a) the dial illumination does not work properly, or

b) the speedometer is not in good working order.

5.25 Horn or audible warning device

Reject if

a) the horn is not clearly audible to a person of normal hearing at a distance of at least 90 m, or

b) the pitch varies, unless

1. the vehicle is an ambulance, a rescue vehicle, a civil protection vehicle, a police vehicle or a fire-fighting vehicle, when the sound shall be as prescribed in the Traffic and road safety act or in the traffic and road safety regulations, or

2. the sound is emitted from an anti-theft device that incorporates a siren, or

c) the horn is not operated by a button or switch that breaks contact automatically when it is released.

5.26 Driving controls

Reject if

a) a control is functionally incomplete or is cracked, fractured, excessively corroded or not secure, or if any fasteners are missing, or

b) a control is obstructed or impeded in its travel, or

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c) a control is so positioned that, when operated, it will impair proper control of the vehicle, or

d) auxiliary equipment or any other items liable to interfere with proper control of the vehicle are present, or

e) any pedal, other than the accelerator pedal, does not have the manufactures anti-slip provision (which could include a grooved metal surface) or the pedal surfaces are of smooth metal, or

f) any electrical equipment 'intended to be operated by the driver is not provided with a properly working switch, or

g) when the front wheels are in the straight-ahead position, the steering wheel obscures the speedometer or the low air-pressure warning device, or both.

5.27 Steering wheel

Reject

a) any vehicle that belongs to any of the following groups and the steering wheel is on the left hand side:

1. a goods vehicle with a gross vehicle mass exceeding 3 500 kg;

2. a minibus with a gross vehicle mass exceeding 3500kg or that is designed or adapted to carry 12 or-more persons, including the driver

3. a bus;

4. a breakdown-vehicle; and

5. a motor vehicle used for the conveyance of persons for reward,

(b) the play at the steering wheel exceeds 45° or the manufacturers recommendation, or

(c) there is any relative movement between the steering column shaft and the steering wheel, or

(d) the retaining device on the steering wheel hub is missing, or

(e) the steering wheel hub, rim or any spoke is broken or damaged, or

(f) the steering wheel is smaller than that prescribed and supplied by the manufacturer, or

(g) the steering is inoperative, or

5.28 Steering system

Reject if

a) the centre of the steering wheel exhibits excessive up and down (end float) movement in line with the steering column, or

b) the top of the steering column exhibits excessive radial movement from the axis of the steering column (side play), or

c) a flexible coupling or universal joint is excessively worn or is not secure, or

d) there are any signs of repair by heating or welding, or

e) a collapsible column or rod has been repaired after collapse, or

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f) there are modifications not approved by the manufacturer.

5.29 Handlebars and steering (motorcycles/tricycles/quadrucycles only)

Examine the handlebars, front forks, connections and components from the handlebars to the front wheel or wheels and reject if

a) handlebars are not symmetrical, or

b) the distance between the outside edges of the handlebars is not at least

1. 600 mm for a motorcycle/tricycle/quadrucycle with an engine capacity of 200 cc or more,

2. 500 mm on all other motorcycles/tricycles/quadrucycles, or

(c) the outer ends of the handgrips are

1. higher than 500 mm above the seat, or

2. lower than the seat, or

3. more than 800 mm apart, or

(d) handlebars are reconstructed or modified, or

(e) the steering lock on both sides is not approximately the same, or

(f) the handlebars foul any part of the vehicle, or

(g) with the handbrake applied, there is any bending or twisting or, with the front wheels lifted off the ground, there is any excess stiffness, roughness, looseness or forward or backward play of the steering, or

(h) the steering damper (if fitted) is not in good condition and, where relevant, not capable of adjustment, or

(i) there is any play on the fork, or

(j) there is an excessive amount of lost motion (backlash) in the steering mechanism from the handlebar to the front wheel (or, where relevant, to each front wheel) when the wheel is in the straight-ahead position, or

(k) the free movement of the handlebar is excessive, or

(l) when an assistant moves the handlebars gently to and fro and the connections and joints of front forks and components are carefully observed,

1. there is any sign that any part of the steering mechanism has been redesigned or modified (other than to incorporate a modification made or approved by the manufacturer), or

2. there is excessive looseness in any connection or joint, or

3. any steering connection is not securely locked, or

4. packing material of any kind has been used in any steering connection or joint in order to take up clearance caused by damage or wear.

NOTE: When steering parts are worn to an extent that creates doubt as to whether or not the motorcycle/tricycle/quadrucycle should be rejected, use the performance of the vehicle during the road test as the deciding factor.

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5.30 Air or vacuum warning device of braking systems (where applicable)

Reject if

a) in the case of any motor vehicle equipped with a service brake that is operated solely by air or vacuum, or

b) in the case of any motor vehicle equipped or intended to draw a trailer fitted with an air brake or vacuum brake,

the device that is intended to give visible or audible warning of the pressure becoming such that the brake is incapable of stopping the vehicle as specified in 5.56 and 5.57, is missing or inoperative.

5.31 Braking systems: build-up of air pressure or vacuum (where applicable)

Reject if the time between starting the engine with the reservoirs empty and reaching the operating pressure recommended by the manufacturer is excessive.

5.32 Hand levers controlling mechanical braking systems (inspection in vehicle)

Reject if

a) the brake lever is fractured or excessively corroded, or

b) the wear of the pawl mechanism or in the lever pivot is excessive, or

c) the lever does not operate correctly, or

d) any fasteners are missing, or

e) any part shows signs of having been repaired by heating or welding.

5.33 Service brake pedal (inspection in vehicle)

Reject if

a) there is excessive wear or travel in the pedal or in its linkage, or

b) the designed movement of the pedal is obstructed or there is insufficient clearance to allow for any adjustment, or

c) any attachments to the pedal assembly are loose, or

d) any part shows signs of having been repaired by heating or welding.

5.34 Service brake operation (inspection in vehicle)

Reject if

a) the air pressure or vacuum decreases when the pedal is kept depressed with the engine running, or

b) in the case of a hydraulic system, there is sponginess or the pedal creeps down when a light, firm pressure is maintained on the pedal, or

c) in the case of a vacuum system, no dip can be felt when the engine is started and pressure is maintained on the pedal.

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5.35 Hand-operated air brake valves (inspection in vehicle)

Reject if

a) there is any cracks, damage or insecure attachment, or

b) full travel of the control is obstructed, or

c) any connection is loose, or

d) there is an audible leak in the system.

5.36 Chassis or frame

Reject if

a) there are any cracks in, or if there is excessive corrosion of, any cross-member or main member, or

b) any cross-member or main member is deformed to the extent that the control of the vehicle or safe carnage of the load could be affected, or

c) any flitch plate, nut, bolt or other fastening between the frame and a cross-member is loose or insecure, or is missing, or

d) there is any unsatisfactory welding (in the opinion of the examiner), or

e) there has been any modification or drilling that weakens the chassis or frame.

5.37 Electrical wiring and equipment

Reject if

a) any wiring is not properly insulated, or

b) any wiring is not secured or is chafing in a manner likely to affect its insulation, or

c) the battery and battery carrier are not secure, or

d) the battery case is leaking or a battery cap is missing, or

e) any switch is loose or does not operate correctly, or

f) any fuses have been replaced by, for example, metal foil, nails or copper wire.

5.38 Engine

5.38.1 Starting and functioning

Check whether the engine functions normally, and reject if it is not capable of being started by the self-starter or, if not equipped with a self-starter, by means of a crank handle or similar device.

5.38.2 Smoke and leaks

Ensure that the oil in the engine is at normal level. Start the engine. Inspect for leaks. Reject if

a) the engine emits excessive smoke or fumes, or

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b) there is an excessive leak in the cooling system, or

c) with or without the engine running, there are excessive oil leaks to the extent that the oil visibly moves or drips during inspection.

5.38.3 Fitting of non-standard engines

If any engine is fitted that is not of the standard make and type for that particular vehicle, reject if, in the opinion of the inspector, the engine is excessively powerful for the vehicle in question.

5.38.4 Engine cover

Reject if the engine is not so covered in such a way that it is a source of danger to any person (motor-cycles/tricycles/quadrucycles exempted).

5.39 Engine and transmission mountings

Reject if any mounting or mounting bracket

a) is reinstated or is loose or fractured, or

b) has deteriorated to the extent that its effectiveness is impaired, or

c) is poorly welded, or

d) has had its effectiveness impaired because of cutting of the chassis or the bodywork.

5.40 Drive chain (motorcycles/tricycles/quadrucycles only)

Reject if, in the case of a vehicle that has a driving chain and sprockets

a) the chain is out of alignment or not properly tensioned, or

b) the chain is excessively worn or the chain guard is missing, or

c) the sprocket teeth are "hooked" or otherwise excessively worn.

5.41 Oil leaks

Reject if

a) there is oil leaking from any assembly to the extent that the oil visibly moves or drips during inspection, or

b) there is any evidence of excessive oil spray, or

5.42 Fuel system

Reject if

a) the fuel tank is not secure or if any part of the system is leaking or has, in the opinion of the inspector, been repaired in an unsatisfactory manner, or

b) a filler cap is missing or is defective, or

c) fuel pipes are damaged, chafed or not secured.

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5.43 Exhaust system

Reject if

a) except in the case of slip joints on heavy vehicles where slight leaks are acceptable, the exhaust gas leaves the exhaust system by means other than through the silencer or muffling device, or

b) the exhaust gas or smoke is so dense as to cause a nuisance to or obstruct the vision of other road users, or

c) the exhaust pipe or silencer

   1) is in such a position that oil or other flammable liquid or material can drip or fall onto it, or

   2) is not in efficient working order, or

   3) is so placed and maintained that exhaust gas or smoke leaks into the driving cabin or passenger compartment of the vehicle, or

d) the exhaust system is within 25 mm of any hydraulic brake system pipe unless it has been properly insulated, or

e) any exhaust gases are discharged onto any fuel container, fuel hose, spare wheel (if fitted), battery or any part of the brake system, or

f) the exhaust system is not secure, or

5.44 Suspension units

5.44.1 Springs

Reject if

a) any spring is broken or sagging, or has been "packed" (to counter sagging) with materials or components other than those specified by the manufacturer, or

b) any spring leaf or U-bolt is missing or is loose, broken or cracked, or

c) a spring centre bolt or clip is missing or is broken, or

d) the springs do not maintain the unladen vehicle in a reasonably level position, or

e) there is any crack in the spring cradle, or

f) any part shows signs of having been repaired by heating or welding.

5.44.2 Shackles

Reject if

a) a shackle or shackle pin shows excessive wear, or

b) the wear in any shackle bearing is excessive, or

c) the side clearance in a shackle is excessive, or

d) a slipper is fractured, excessively worn or not securely fixed.

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5.44.3 Axle locating assembly

Reject if

a) any part is missing, or is loose, fractured, permanently distorted or damaged, or

b) bearing surfaces show excessive wear, or

c) in the case of bonded suspension units, the flexible element is not firm or shows evidence of failure of the bond, or

d) the vehicle is "crabbing".

5.44.4 Air suspension

Reject if

a) there is an excessive air leak in the system, or

b) the levelling system is defective, or

c) when fully deflated, a suspension bellows is in such a condition that the body of the vehicle fouls any road wheel, or

d) the vehicle is noticeably leaning.

5.44.5 Hydraulic suspension

Reject if

a) any fittings or hydraulic pipes are loose, chafing or leaking, or

b) the operation of the hydraulic system is not as prescribed by the manufacturer.

5.44.6 Front and rear forks (motorcycles/tricycles/quadrucycles only)

Carefully examine the front and rear forks.

Reject if

a) there is any sign of redesign or modification (other than a modification made or approved by the manufacturer) of the front forks or suspension, or

b) there is any crack, bend or twist (other than bends or twists formed during original manufacture) in the front forks, or

c) there is any sign of the forks having been heated or welded (other than during original manufacture), or

d) any bolt or rivet is missing, or

e) any brake torque arm is not property secured, or

f) there is excessive play fore and aft in the front forks, or

g) rear suspension fork bushes are excessively worn.

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5.44.7 Road test (motorcycles/tricycles/quadrucycles only)

Examine the performance of the steering and front suspension in a road test on a road with a reasonably level, dry, smooth and hard surface (this test may be combined with the braking test on the road (see 5.56.2)).

Reject if

a) the vehicle cannot maintain a straight-ahead direction, or

b) wheel wobble becomes evident, or

c) any defect becomes apparent when the steering is turned from side to side at a speed of 5 km/h to 10 km/h

5.44.8 Semitrailer

Reject unless the axle unit is fitted with one type of suspension only, namely either air suspension, steel suspension or rubber suspension.

5.45 Shock absorbers

Reject if

a) a shock absorber is loose, or

b) an anchorage or a linkage is fractured or is excessively worn, or

c) an excessive fluid or air leak is present, or

d) a shock absorber is damaged to the extent that the unit is not functioning correctly, or

e) where it can be seen that the vehicle is designed for the fitment of shock absorbers and these are missing, or

f) in the case of motorcycles/tricycles/quadrucycles, the front mudguard or frame touches the tyre, when the handlebar is pressed down, or the handlebar "hits back solid" when it is allowed to rebound.

5.46 Stub axles, wheel bearings, control arms and kingpins

Reject if

a) there is excessive play present, or

b) the kingpin or ball-joint assembly is loose in the axle beam or its pin-retaining device is missing, or

c) the control arm bushes are worn or any part is not properly affixed or is missing, or

d) the control arms are cracked, or are bent, twisted or welded other than by the vehicle manufacturer.

5.47 Stabilisers and anti-roll bars

Reject if

a) a stabiliser or an anti-roll bar is missing, or

b) a stabiliser or an anti-roll bar is bent or has been repaired by heating or welding, or

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c) stabiliser bushes are worn, or

d) stabiliser mountings are in poor condition, or

e) any welds or bends, other than those introduced by the vehicle manufacturer, or any signs of damage are apparent in the front suspension.

5.48 Steering mechanism

Reject if

a) any part of the steering mechanism is missing, or is cracked, fractured, damaged, distorted, loose or excessively worn, or

b) the proper movement of any part is obstructed by another part of the vehicle, or

c) any fastener, retaining device or locking device is missing or is not correctly fitted, or

d) any part shows signs of having been repaired by packing, heating or welding, or

e) the steering mechanism does not operate smoothly throughout its working range, or

f) there are excessive oil leaks, or

g) steering stops are missing, or are not similarly adjusted on each side.

5.49 Power steering

Examine the power steering both with and without the engine running.

Reject if

a) the rod anchorage is fractured or loose, or

b) the cylinder is fractured or leaking, or

c) the fluid pipes are damaged or leaking or are fouling other parts of the vehicle, or

d) there is excessive free valve travel or the unit is out of alignment or the power assistance is inoperative, or

e) there is evidence of modification that has been done in such a way that compromises vehicle safety

5.50 Transmission system (all vehicles)

Reject if

a) a flange bolt is loose or is missing or a flange is loose on its shaft, or

b) a bearing housing is fractured or not secure, or

c) there is a damaged or bent shaft, or

d) there is significant deterioration of the flexible mounting of a bearing housing, or

e) there is excessive wear on the splined joint, or

f) there is excessive vibration or abnormal noise (or both), or

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g) the clutch slips or gives excessive shudder, or (investigate)

h) gears cannot be selected or will not remain in mesh without manual assistance, or

i) in the case of an automatic gearbox, the engine will start with the gear lever in one or more of the forward or reverse positions or does not start in the neutral position, or

j) a rubber boot of a constant velocity joint is torn or permits lubricant to escape.

5.51 Wheel alignment

Use an acceptable alignment indicator to measure the sideslip or "scuff" on the front wheels. Check the wheel camber.

Reject if

a) for the side slip, the camber exceeds the manufacturers specified limits, or

b) in the case of a semitrailer, any axle is out of square to the longitudinal centre-line of the vehicle by more than 10,0 mm per metre of length of trailer, or

c) in the case of a motorcycle/tricycle/quadrucycle, the front wheel(s) (in the straight-ahead position) and rear wheel(s) are not in the same vertical plane. When relevant, check the alignment of the sidecar wheel and reject if it is not parallel to or has slight "toe-in" towards the front wheel (in the straight-ahead position).

5.52 Braking system — General

Reject if

a) any part of the braking system is missing, or is cracked, fractured, damaged, distorted, loose or excessively worn, or

b) the proper movement of any part is obstructed by another part of the vehicle, or

c) any fastener, retaining device or locking device is missing or is incorrectly fitted, or

d) any part shows signs of having been repaired by heating or welding, or

e) in the case of motor vehicles with an anti-theft device is connected to the braking system or in any way interferes with the braking system, or

f) a tractor not designed for or capable of operating at a speed exceeding 35 km/h or a trailer drawn by such tractor.

g) in the case of a trailer with a gross vehicle mass exceeding 3 500 kg, the trailer is not fitted with a service brake.

5.53 Braking system — Specific items

Reject if any of the following are found:

a) excessively worn linings, pads or discs: or

b) cracked brake drums; or

c) levers set to incorrect angles; or

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d) linings or pads contaminated with oil; or

e) bending of, or damage to, brake rods; or

f) fraying of, or other damage to, brake cables; or

g) any leakage of hydraulic fluid; or

h) brake pipes that are excessively chafed, corroded or damaged, or inadequately secured; or

i) brake pipes that are kinked or bulging, or so positioned as to be liable to be damaged by moving parts or by heat; or

j) a faulty or no functioning air reservoir; or

k) trailer couplings that are interchangeable but not coded; or

l) an incorrectly adjusted load-sensing valve', or

m) automatic slack adjusters that have any parts missing; or

n) leaking air connections or vacuum connections; or

o) frayed, worn or incorrectly tensioned air compressor drive belts; or

p) hydraulic reservoirs without caps; or

5.54 Trailer parking brake

Reject if

a) the brake does not operate on at least two wheels on the same axle, or

b) the parking brake cannot be applied.

5.55 Brakes and braking performance (motorcycles/tricycles/quadrucycles only)

5.55.1 Subject to the provisions of all the braking regulations given in the traffic and road safety act, a vehicle shall be equipped with two separate braking systems, one acting on the front wheel(s) and one on the rear wheel(s). The performance of each braking system shall be equivalent to that specified for an emergency brake and with both braking systems applied, their combined performance shall be equivalent to the performance specified for a service brake.

Reject if

a) there is not an adequate reserve of travel of both foot brake pedal and hand-operated brake lever when fully applied, or

b) the foot brake pedal does not have a non-slip surface, or

c) the brakes are not so adjusted that (after making due allowance for nominal resistance to rotation of wheels owing to disc-pad or transmission drag) the vehicle will move freely when the brakes are released, or

d) any hydraulic brake is not capable of giving full and efficient application of the brake with only one stroke of the lever or pedal (as relevant), or

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e) the lever or pedal of an hydraulic brake continues to move under a constant pressure maintained for 1 min, or

f) the lever or pedal of a brake does not return to its original position when released after application.

5.55.2 With the vehicle travelling at an initial speed of 35 km/h on a road with a reasonably level, dry, smooth and hard surface, with the tyres properly inflated and the engine disengaged, take measurements (under all conditions of loading) from the actual instant at which the braking controls are moved. If the following maximum stopping distances are exceeded, repeat the test and, if necessary, carry it out a third time:

Handbrake	30 m
Foot brake	30m
Handbrake and foot brake combined	14m

Reject if

a) during the final test(s), the vehicle cannot, under all conditions of loading, be stopped within the appropriate maximum stopping distance, or

b) the action of either brake is not even and controllable, or

c) there is any grabbing of the brakes, or

d) the brake application affects the steering or the course of the vehicle.

5.56 Braking performance (light and heavy vehicles)

5.56.1 Service and emergency brakes

5.56.1.1 Test methods

Determine the brake efficiency of both the service brake and the emergency brake, and the individual brake performance, using the methods described in (a) and (b) below:

NOTE: A vehicle may be presented laden or unladen.

a) direct measurement of brake efficiency: Use an acceptable brake roller testing machine or do an actual road test. Reject the vehicle if the braking force developed is less than the appropriate value shown in tables 1 to 8; and

b) individual brake performance: Use an acceptable brake roller testing machine to assess the performance of each individual brake and reject if

1. excessive drum ovality or disc distortion is shown by cyclical variation of the braking force, or

2. the output brake force of any individual brake is different from that of any other brake on the same axle by more than 30 %.

NOTE Should the brake rollers lock, the vehicle should not necessarily be failed as it could well be a roller brake tester fault.

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5.56.1.2 General braking performance

With the vehicle travelling at a speed of 35 km/h (or, when relevant, at the speeds given in the appropriate of tables 2, 4, 6 and 8) on a road with a reasonably dry, smooth and hard surface and with the engine disengaged, apply the appropriate brake and note the general braking performance. Measure either

a) the stopping distance from the point at which the braking control first moved, to the point where the vehicle stops, or

b) the deceleration, using an acceptable decelerometer.

Reject if

1. the stopping distance is more than, or the deceleration is less than, the appropriate value given in tables 1 to 4 for light vehicles and in tables 5 to 8 for heavy vehicles, or

2. during the road test there is excessive pedal travel or brake shudder or the vehicle is pulling to the left or right during the application of the brakes.

Table 1— Service brake of light vehicle or combination of vehicles capable of exceeding a speed of 35 km/h

1	2	3	4
Initial speed km/h	Maximum stopping distance m	Minimum deceleration m/s^2	Minimum equivalent braking force N/kg
35	14	4,4	4,4

Table 2—Service brake of light vehicle or combination of vehicles not capable of exceeding a speed of 35km/h

1	2	3	4
Maximum initial speed km/h	Maximum stopping distance m	Minimum deceleration m/s^2	Minimum equivalent braking force N/kg
15	7	1,9	1,9
20	11	1,9	1,9
25	16	1,9	1,9
30	23	1,9	1,9
35	30	1,9	1,9

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Table 3—Emergency brake of light vehicle or combination of vehicles capable of exceeding a speed of 35 km/h

1	2	3	4
Initial speed km/h	Maximum stopping distance m	Minimum deceleration m/s^2	Minimum equivalent braking force N/kg
35	30	1,9	1,9

Table 4 — Emergency brake of light vehicle or combination of vehicles not capable of exceeding a speed of 35 km/h

1	2	3	4
Maximum initial speed km/h	Maximum stopping distance m	Minimum deceleration m/s^2	Minimum equivalent braking force N/kg
15	12	0,95	0,95
20	20	0,95	0,95
25	29	0,95	0,95
30	41	0,95	0,95
35	55	0,95	0,95

Table 5 — Service brake of heavy vehicle or combination of vehicles capable of exceeding a speed of 35 km/h

1	2	3	4
Initial speed km/h	Maximum stopping distance m	Minimum deceleration m/s^2	Minimum equivalent braking force N/kg
35	16	4,4	4,4

Table 6 — Service brake of heavy or combination of vehicles not capable of exceeding a speed of 35 km/h

1	2	3	4
Maximum initial speed km/h	Maximum stopping distance m	Minimum deceleration m/s^2	Minimum equivalent braking force N/kg

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15	7	1,9	1,9
20	11	1,9	1,9
25	16	1,9	1,9
30	23	1,9	1,9
35	30	1,9	1,9

Table 7 — Emergency brake of heavy vehicle or combination of vehicles capable of exceeding a speed of 35 km/h

1	2	3	4
Initial speed km/h	Maximum stopping distance m	Minimum deceleration m/s^2	Minimum equivalent braking force N/kg
35	30	1,9	1,9

Table 8 — Emergency brake of heavy vehicle or combination of vehicles no capable of exceeding a speed of 35km/h

1	2	3	4
Maximum initial speed km/h	Maximum stopping distance m	Minimum deceleration m/s^2	Minimum equivalent braking force N/kg
15	12	0,95	0,95
20	20	0,95	0,95
25	29	0,95	0,95
30	41	0,95	0,95
35	55	0,95	0,95

5.56.2 Parking brake

Test the performance of the parking brake (in both the forward and the reverse direction) on a gradient of not more than 1: 8,33 (12 %), or by using an acceptable brake roller test machine. Reject if, with the engine disengaged, the parking brake alone cannot keep the vehicle stationary.

NOTE A vehicle may be presented laden or unladen.

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5.57 Dimensions

5.57.1 Overall length

Reject if the overall length of

a) a bus-train exceeds 20 m, or

b) a single vehicle, excluding a semitrailer, including any drawbar or coupling, exceeds 12,5 m, or

c) a trailer with one axle or axle unit (other than a semitrailer), the GVM of which does not exceed 12 000 kg, exceeds 8 m, excluding the length of the drawbar or coupling, or

d) a trailer exceeds 1,8 m and there is no articulation between the drawing vehicle and the trailer, including any drawbar or coupling, or

e) an articulated motor vehicle or other combination of motor vehicles consisting or a drawing vehicle and a semitrailer, including any drawbar or coupling, exceeds 18,5 m, or

f) a trailer with one axle or axle unit (other than a semitrailer), the GVM of which exceeds 12 000 kg, exceeds 11,3 m, excluding the length of the drawbar or coupling, or

g) a trailer not referred to in (c), (d) and (f) above (other than a semitrailer), the GVM of which exceeds 12 000 kg, exceeds 12,5 m, excluding the length of any drawbar or coupling, or

h) any other combination of vehicles , including any drawbar or coupling, exceeds 22 m.

NOTE: This subclause does not apply to a breakdown vehicle while towing another motor vehicle.

5.57.2 Overall width

Reject if the overall width of any vehicle, including a minibus, exceeds 2,5 m, except that 2,6 m is permitted in the case of

a) goods vehicles with a GVNA of at least 12 000 kg, and

b) buses where the distance between the centre-lines of the two front wheels exceeds 1,9 m.

5.57.3 Overall height

Reject if the overall height of

a) any vehicle (other than a double-deck bus) laden or unladen, exceeds 4,3 m, or

b) a double-deck bus exceeds 4,65 m.

5.57.4 Wheelbase

Reject if the wheelbase of

a) a semitrailer exceeds 9 m, unless a certificate issued by the inspectorate of manufacturers, builders and importers, which reflects that the cornering, reversing and road damage performance of the semitrailer presents no greater hazard than a nine-metre wheelbase tandem-axle semitrailer, is affixed to the semitrailer or carried in the drawing vehicle concerned, or

b) a bus-train exceeds 15 m, or

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c) any other vehicle exceeds 8,5 m.

5.57.5 Overhang

5.57.5.1 Reject if the front overhang of

a) a semitrailer exceeds 1,8 m, or

b) any vehicle (other than a semitrailer or a trailer with one axle or one axle unit)

1. exceeds 60 % of the wheelbase, or

2. exceeds 6,2 m less half the wheelbase, in the case of a vehicle in which the front surface of the backrest of the drivers seat at seat level is within 1,7 m of the front end of the vehicle, when such seat, if adjustable, is in the rearmost position, or

NOTE: In the case of bus-train, this wheelbase is the distance measured from the centre of the front axle to the centre of the middle axle.

3) exceeds 5,8 m less half the wheelbase, in the case of any other vehicle.

5.57.5.2 Reject if the rear-overhang of

a) a bus, self-propelled caravan or any vehicle designed or adapted for use in connection with street cleaning or the disposal of refuse or sewage exceeds 70 % of its wheelbase, or

b) any trailer with one axle or one axle unit, other than a semitrailer, exceeds 50 % of the length of the body of the trailer, or

c) any trailer, other than a semitrailer, with two axles, where the distance between the centre-lines of the axles is less than 1,2 m, exceeds 50 % of the length of the body of the trailer, or

d) any other vehicle exceeds 60 % of the wheelbase.

5.58 Lamps and lighting

5.58.1 General

Reject if

a) any of the following are not fitted:

1. headlamps with main and dipped beams,

2. front position lamps,

3. rear lamps,

4. stop lamps, and

5. registration plate lamp(s), or

(b) any lamp listed in (a) above is damaged, does not work or is not secure, or

(c) any lamp is not bright enough to be seen from a distance of 150 m when visibility is such that persons and vehicles are not clearly discernible at 150 m. furthermore, the luminous intensity of the headlamp with high beam shall be at least the values given below;

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1 12,000 cd per lamp, in the case of headlamps which are other than the four-unit type headlamp and which have such construction that the headlamps with low beam go on simultaneously.

2 12,000 cd per headlamp with high beam, in case of the four-unit type headlamps.

(d) any lamp, excluding a reversing lamp, a direction indicator and an official flashing identification lamp, emits a light that is not red in colour towards the rear, or

(e) any lamp, excluding an official flashing identification lamp, emits a red light towards the front or to either side of the vehicle, or

(f) any lamp is obscured by portions of the vehicle, excluding protective lamp grilles, or

(g) any lamp, excluding headlamps, fog lamps, spotlamps and inspection lamps, does not emit a diffused light, or

NOTE: A brake anti-lock warning light that is fitted to the front of a trailer may emit any colour.

5.58.2 Headlamps

Reject if

a) the centre of any headlamp is less than 450 mm or more than 1,4 m from ground level, or more than 500 mm behind the front end of the vehicle, or

b) there is not a dipped-beam headlamp on each side of the longitudinal centre-line of the vehicle, with the outermost portion of its illuminating surface within 400 mm of the outer edge of the vehicle, unless a parking lamp is provided on the same side, or

c) there are more than three headlamps or more than one dipped-beam headlamp on each side of the longitudinal centre-line of the vehicle, or

d) any main or dipped beam is incorrectly adjusted, or

e) headlamp beams are not of similar intensity, or

f) any lens or reflective surface is clouded, discoloured, broken or loose, or

g) the dip switch does not function property, or

h) any lamp is fitted with a lens of clear material, unless the lamp has other means of preventing dazzle, or

i) in the case of a motorcycle, a sidecar is not fitted with either

1. a headlamp, or

2. a parking lamp on the outer edge of the front of the sidecar, in accordance with 5.59.4(c), or

j) in the case of a motor tricycle with two wheels in front or a motor quadrucycle, there is not a dipped-beam headlamp on each side of the longitudinal centre-line of the vehicle, with the outermost portion of its illuminating surface within 400 mm of the outer edge of the vehicle, unless a parking lamp is provided on the same side.

5.58.3 Fog lamps (if fitted)

Reject if

a) there are more than two fog lamps fitted to the vehicle at the front or at the rear, or

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b) any fog lamp is not correctly adjusted, or

c) any fog lamp fitted to the front of a vehicle has the highest point of its illuminating surface higher than the highest point of the illuminating surface of any dipped-beam headlamp, or

d) any fog lamp fitted to the rear of a vehicle has the lowest point of its illuminating surface less than 250 mm from ground level, or the highest point of its illuminating surface more than I m from ground level, or

e) any fog lamp at the rear of the vehicle can be brought into operation without a front fog lamp or headlamp being switched on, or

f) a motorcycle sidecar has fog lamps, unless the motorcycle is also fitted with a fog lamp or parking lamp, or

g) a motorcycle has a fog lamp in front but its sidecar does not have a parking lamp.

5.58.4 Parking lamps (if fitted)

Reject if

a) when one parking lamp is fitted at the rear, it is not fitted to the right-hand side of the vehicle, or

b) when two parking lamps are fitted at the front and at the rear, any set is not fitted equidistant on either side of the longitudinal centre-line of the vehicle, or

c) that portion of the illuminating surface furthest from the longitudinal centre-line of the vehicle is more than 500 mm from the adjacent outer edge of the vehicle.

5.58.5 Spotlamps (swivelling lamps)

Reject any vehicle fitted with a lamp that swivels, except those vehicles where, in the opinion of the examiner, such a lamp is used only as an inspection lamp.

5.58.6 Rear lamps (rear position lamps), registration plate lamps and stop lamps

5.58.6.1 Rear lamps (rear position lamps)

Reject if

a) there is not at least one of the following:

1. one rear lamp fitted on either side of the longitudinal centre-line of the vehicle, not more than 400 mm from the outer edges of the widest part of the vehicle, or

2. one rear lamp in the centre in the case of a motorcycle/tricycle/quadrucycle; or

3. one rear lamp to the right of the centre-line of the vehicle, in the case of a motorcycle/tricycle/ quadrucycle; or

(b) any rear lamp does not emit a red light of luminous intensity at least two candelas (2 cd), or

(c) in the case of a motor vehicle where the height, from ground level to the lowest point of the illuminating surface(s) of the rear lamp(s) mentioned in (a) above is lower than 300 mm, or the- highest point of the illuminating surface(s) is higher than 2,1 m, or

(d) in the case of a motor vehicle where the height, from ground level to the lowest point of the illuminating surface(s) of the rear lamp(s) mentioned in (a) above, is lower than 350 mm, or the highest point of the illuminating surface(s) is higher than 1,5 m (if the structure of the vehicle makes this impractical, the rear

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lamps may be fitted such that the highest point of the illuminating surface(s) of the rear lamp is up to 2,1 m from ground level), or

(e) in the case of a motor vehicle where any rear position lamp is not visible from the specified angles in the horizontal plane as given below and in figure 1:

1. inwards 45º, and

2. outwards 80º.

(Figure 1 shows how the angles can be measured.)

NOTE: in all cases, additional rear lamps may be fitted more than 2,1 m from ground level.

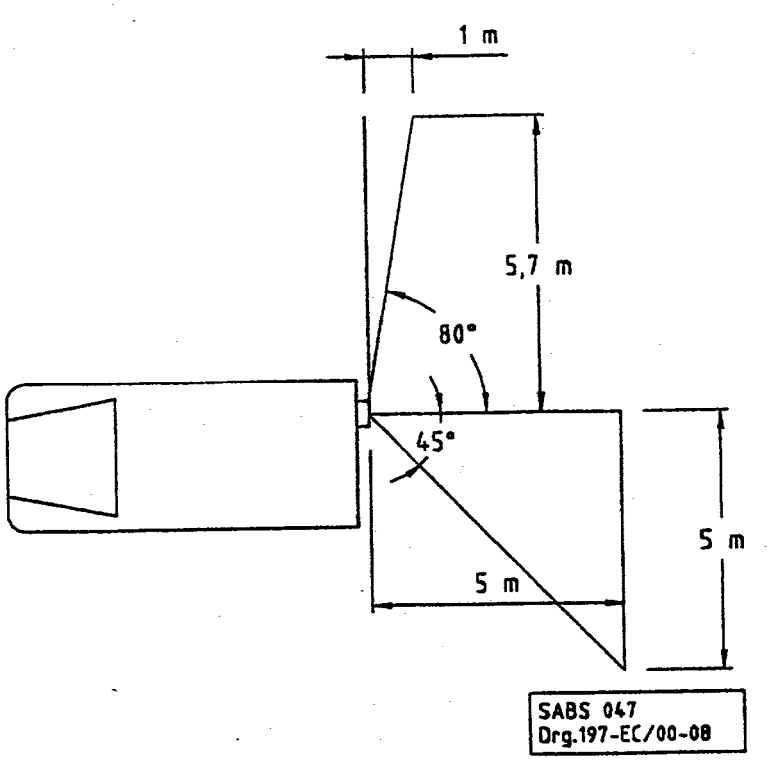

Figure 1 – Visibility angles for rear position lights

5.58.6.2 Registration plate lamps

Reject if

a) the rear registration plate is not illuminated with a white light (provided by the rear lamp or some other lamp), or

b) the white light is visible from the rear other than by reflection.

5.58.6.3 Stop lamps

Reject if

a) any stop lamp is missing, or

b) any stop lamp does not emit a red light of greater intensity than the rear lamp (rear position lamp), or

c) any stop lamp does not light when the service brake is applied, or

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d) any stop lamp, when in use, is not visible from 310 m in normal sunlight, or

e) any stop lamp is not visible from the required angles., or

NOTE Figure 2 shows how the specified angles in the horizontal plane of 45º (inward and outwards) can be measured.

(f) the height of the centre of any stop lamp is lower than 300 mm or higher than 2,1 m from ground level (although additional stop lamps may be fitted at a height above 2,1 m), or

(g) except in the case of a tractor, or a trailer drawn by a tractor, both of which may have only one stop lamp, there are not two stop lamps, or

(h) the two stop lamps are not; or

1. both fitted equidistant from the longitudinal centre-line of the motor vehicle, and

2. fitted one on each side of the longitudinal centre-line, or

(i) in the case of a single stop lamp on a motorcycle/tricycle/quadrucycle, the lamp is not in the centre or to the right of the longitudinal centre-line of the vehicle, or

(j) in the case of a motor quadrucycle or motor tricycle with two back wheels, the two stop lamps are not

1. both fitted equidistant from the longitudinal centre-line of the motor vehicle, and

2. fitted one on each side of the longitudinal centre-line.

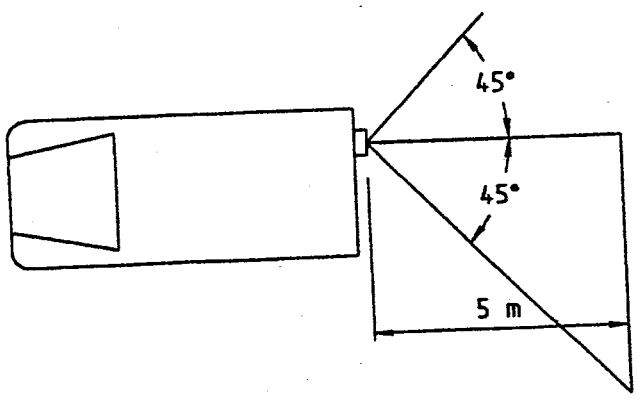

Figure 2 – Visibility angles for stop lamps

5.58.7 Reversing lamps (if fitted)

Reject if

a) when a reversing lamp is under the direct control of the driver, it is so connected to a device that makes the driver aware that the lamp is in operation, or

b) when a reversing lamp is not controlled by the driver, it operates when the reverse gear is not engaged, or

c) more than two reversing lamps are fitted, or

d) the light from a reversing lamp is not diffused and white.

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5.58.8 Side marker lamps (if fitted)

Reject if

a) there is no lamp within 400 mm of each end of the vehicle, or

b) any lamp is less than 300 mm from ground level, or

c) the distance between successive lamps on any vehicle or vehicle combination exceeds 3,6 m, or

d) the lamp does not emit a yellow or amber light, except that the furthest forward lamp may emit a white light and the rearmost lamp may emit a red or amber light, or

e) the lamp does not face outwards from the side to which it is fitted in a direction at right angles to the longitudinal centre-line of the vehicle to which it is fitted, or

f) in the case of a breakdown vehicle, side marker lamps are not fitted.

5.58.9 End outline marker lamps (if fitted)

Reject if

a) the lamps do not emit a white light to the front and a red light to the rear, or

b) the lamps are not fitted as near as possible to the outer edges of the vehicle or are not as high up as possible.

5.58.10 Front position lamps

Reject if

a) the lamps are more than 400 mm from the outer edges of the widest part of the vehicle or vehicle combination or, if the vehicle is presented laden, from the load on it or, in the case of a trailer, lamps are more than 150 mm from the outer edges of the widest part of the vehicle or vehicle combination or, if the vehicle is presented laden, from the load on it, or

b) the lamps do not emit a white light visible from the front, or

c) the lamps are less than 350 mm or more than 2,1 m from ground level, or

d) in the case of a vehicle of gross vehicle mass exceeding 3 500 kg where any front position lamp is not visible from the specified angles in the horizontal plane as given below and in figure 3:

   1. inwards 45º, and

   2. outwards 80º.

(Figure 3 shows how the angles can be measured.)

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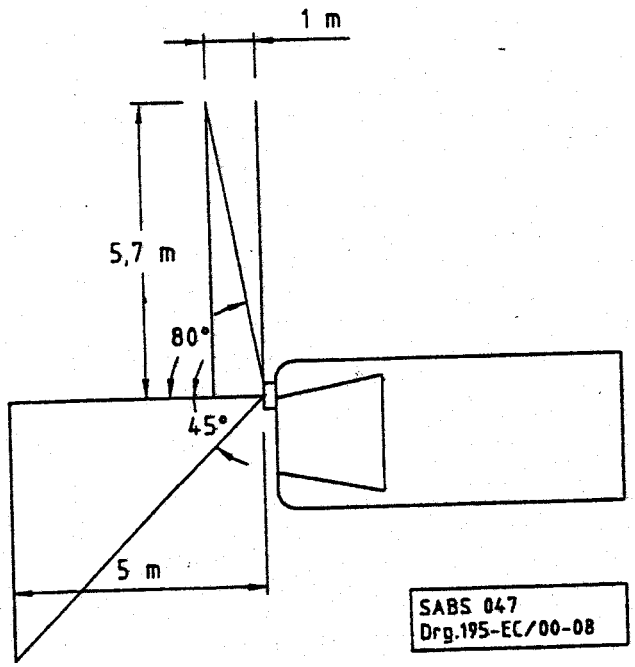

Figure 3 – Visibility angles for front position lamps

5.58.11 Identification lamps (if fitted)

Reject if

a) the power of any identification lamp exceeds 21 W, or

b) the lamp is not visible directly from the front of the vehicle, or

c) the light emitted in the case of a bus or a goods vehicle is not green or amber.

5.58.12 Intermittently flashing identification lamps (if fitted)

Reject if

a) the light emitted in the case of a police or traffic control vehicle is not an intermittently flashing blue light, or blue and amber light, or blue and red light, or blue and amber and red light, or

b) the light emitted in the case of a road maintenance, distribution and supply or electricity, essential public service, breakdown, refuse compactor, abnormal load or abnormal load escort vehicle is not an intermittently flashing amber light, or

c) the light emitted in the case of an ambulance, fire-fighting or rescue vehicle is not an intermittently flashing red light..

5.59 Retro-reflectors

5.59.1 General

Reject if any retro-reflector

a) does not bear the UNBS certification mark or other national or international mark of approval, or

b) is missing, has deteriorated, is not in a vertical position, is broken or is obscured, or

c) is not facing squarely to the front, side or rear, as appropriate, of the vehicle, or

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d) measured at its centre, is less than 300 mm or more than 1,5 m from ground level, or

e) has a reflected colour that is not white in the case of front, red in the case of rear and yellow in the case of side retro-reflectors, or

f) is fitted to any movable part of the vehicle. 5.60.2 Front retro-reflectors

5.59.2.1 Front retro-reflectors on trailers

Reject if

a) two white retro-reflectors are not fitted at the same height at the front on each side of and equidistant from the vehicle's longitudinal centre-line, or

b) a retro-reflector is so placed that the portion of its reflective surface furthest from the longitudinal centre-line of the vehicle is further than 150 mm from the outer edge of the widest portion of the vehicle.

5.59.2.2 Front retro-reflectors (if fitted) on other vehicles (excluding motorcycles/tricycles/quadrucycles)

Reject if

a) two white retro-reflectors are not fitted at the same height at the front on each side of and equidistant from the longitudinal centre-line, or

b) a retro-reflector is so placed that the portion of its reflective surface furthest from the longitudinal centre-line of the vehicle is further than 400 mm from the outer edge of the widest portion of the vehicle.

5.59.3 Side retro-reflectors

Reject if, for any vehicle longer than 7 m;

a) there is no, side retro-reflector within 3 m of the front, or

b) there is no side retro-reflector within 1 m of the rear, or

c) any two successive side retro-reflectors are more than 3,6 m apart.

5.59.4 Rear retro-reflectors

Reject if

a) at least one red retro-reflector is not fitted on each side of the longitudinal centre-line of the vehicle, or

b) the outer edge of the outermost retro-reflector is more than 400 mm from the outer edge of the motor vehicle or trailer, or

c) any motorcycle/tricycle/quadrucycle without sidecar or any motor tricycle with only one wheel at the rear does not have one retro-reflector that complies with 5.60.1 fitted to the rear.

5.60 Use of retro-reflective material

5.60.1 Rear warning sign (chevron)

Reject if

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a) a motor vehicle of GVM exceeding 3 500 kg or a trailer is not fitted with a rear warning sign as may be prescribed in the Traffic and road safety Act and regulations, or

b) the warning sign is not facing squarely to the rear, and within 15º of the upright position, or

c) the lower edge of the warning sign is more than 1,1 m from ground level (except that, if compliance with this provision is not possible, the sign shall be fitted as close to this height as possible), or

d) the warning sign is not clean and in good condition or is obscured by anything that will render it ineffective, or

e) the outer edges of the warning sign are more than 400 mm from the outer edges of the vehicle, or

f) a trailer of GVM not exceeding 3 500 kg has no chevron or does not have at least seven retro-reflectors fitted in place of the chevron, or

g) a motor vehicle, other than those intended in (f), the design or construction of which does not allow a modified chevron to be fitted, does not have at least eleven retro-reflectors fitted in place of the chevron.

5.60.2 Side and rear marking strips and contour markings

5.60.2.1 Reject if a goods vehicle the gross vehicle mass of which exceeds 10 000 kg and is not fitted with side and rear marking strips or contour markings.

5.60.2.2 Where the sides and rear marking strips or contour markings are fitted, reject if the strips or contour markings

a) are not at least 50 mm wide, or

b) do not identify at least 80 % of both the length and width of the vehicle, or

c) are non-continuous and the distance between single elements exceed half of the length of the shortest element, or

d) are less than 250 mm and more than 1 500 mm above the ground, except that in the case where this is not technically possible a maximum height of 2 100 mm is permissible, provided that this limitation shall not apply to any vertical markings or to those horizontal markings that outline the top of the motor vehicle, or

e) do not identify as closely as possible the overall shape of the vehicle to the side and rear, or

f) are not yellow.

5.60.2.3 Where retro-reflective advertising, consisting of retro-reflective logos, distinctive markings or letters or characters, is used in conjunction with contour marking, excluding marking strips, reject if it impairs the effectiveness of the contour marking.

5.61 Flasher-type direction indicators

Reject if a direction indicator

a) is damaged, missing or not securely fitted, or

b) is not functioning correctly, or

c) is obscured or is not visible from the rear of the vehicle within an angle of 15º inside and 45º outside of a line that is parallel to the longitudinal centre-line of the vehicle and that passes through the centre of the

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illuminated area of the indicator, or is not visible from the front within an angle of 45º outside of the said line, or

d) in the case of a goods vehicle of gross vehicle mass exceeding 3 500 kg and the front and rear flashing indicators are not visible from the specified angles in the horizontal plane as given below and in figure 4-.

1. inwards 45º and

2. outwards 80º, or

(Figure 4 shows how the angles can be measured.)

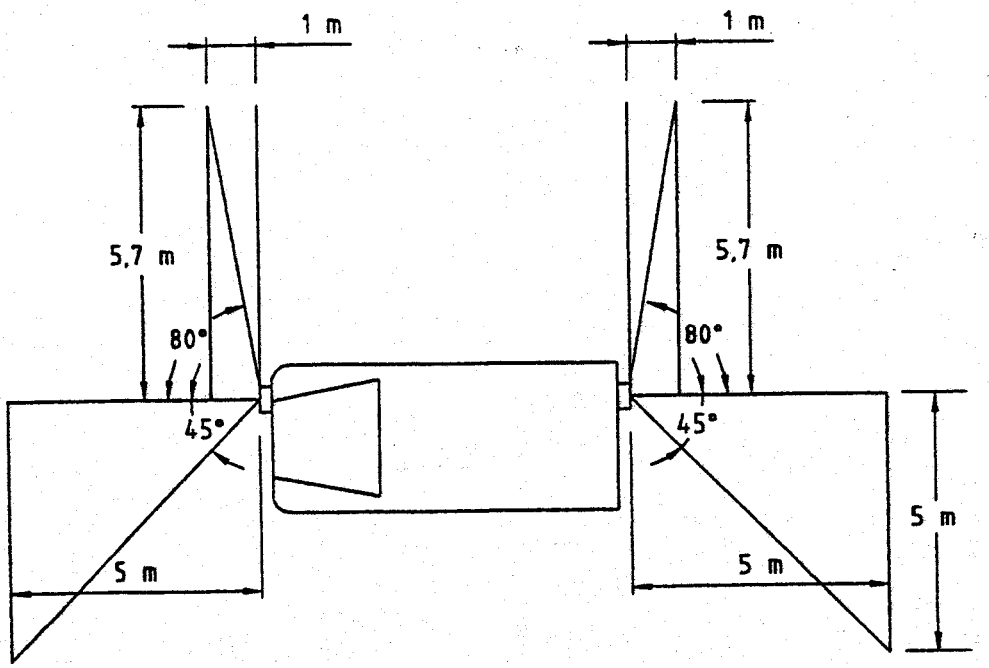

Figure 4 – Visibility angles for flasher type direction indicators

(e) is not positioned as near as possible to but within 500 mm of the outer edge of the front or rear (as applicable) of the vehicle, or

(f) is such that the driver does not have a visible or an audible warning that the indicator is operating, or

(g) does not have a light intensity exceeding that of any other lamp within 150 mm, or

(h) does not have a light intensity that it is clearly visible in normal daylight at a distance of not less than 30 m to a person of normal eye-sight, or

(i) does not emit a white, a yellow or an amber light to the front and a yellow, an amber or a red light to the rear, or

(j) in the case of vehicles that are not fitted with a separate switch that operates all the direction indicators simultaneously.

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5.62 Safety design

Reject if equipment that was fitted (or was required to be fitted) to the vehicle when it was new has been removed or degraded, except in cases where

a) its removal or degradation does not diminish the safety of the vehicle, or

b) the vehicle has been modified for use in an application where such equipment was incompatible with the vehicle's application.

5.63 Twist locks for securing containers

Reject if, in the case of vehicles fitted with twistlocks, the twistlocks are not in good working order.

5.64 General safety

Reject if there is any component part on the vehicle, or in the engine compartment, that has no direct relation to safety but that is loose to the extent that it is likely

a) to fall from the vehicle and cause danger to other road users, or

b) to come into contact with moving engine parts, or

c) to constitute a dangerous fittings that is where; or

   1 an object or fitting, not technically essential to the vehicle, that protrudes from any part of the vehicle in a manner likely to increase the risk of bodily injury to a person; or

   2 a bumper bar, the end of which is not turned towards the body of the vehicle to a sufficient extent to avoid the risk of hooking or grazing.

6 Additional rejection criteria for buses

6.1 General

The vehicle shall be inspected (where relevant) in regard to each relevant provision of this standard. The vehicle shall be deemed roadworthy in the absence of any listed defect; otherwise it shall be rejected as indicated.

6.2 Sides and roof

Reject if

a) the sides of the passenger compartment are not enclosed to a height of at least 600 mm above floor level, with material that is durable and weatherproof, or

b) the roof is not weatherproof.

6.3 Entrances and exits

Reject if

a) at least one side passenger entrance to the main passenger compartment is not provided on the left side, or

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b) there is any entrance for persons, other than the driver, on the right-hand side of the longitudinal centre-line of a bus, or

NOTE: In the case of imported vehicles, if there is any door on the right-hand side of the longitudinal centreline of the vehicles that can be used as an entrance, the door shall be permanently locked by means other than a key.

(c) in the case of a single-deck bus and the lower deck of a double-deck bus, there is not at least one emergency exit

1. in the rear, or

2. on each side towards the rear, unless, in the case of a single-deck bus, an emergency exit is fitted in the roof in place of the exit required on the left side, or

(d) in the case of the upper deck of a double-deck bus. there is not at least one emergency exit

1. in the rear, or

2. on each side and in the roof, or

(e) any emergency exit

1. has dimensions of less than 900 mm x 450 mm, or

2. cannot be opened, or pushed out, or knocked out from both inside and outside, or

3. is designed to open inwards, or

4. is so positioned that passengers have to pass through a goods compartment, or

(f) every entrance to, or exit from, a bus is not fitted with a door or other effective barrier, or

(g) in the case of a bus that has been converted from a goods vehicle, openings of at least 900 mm x 450 mm are not provided in the absence of entrances and exits referred to above.

NOTE: 1 Escape hatches, knock-out windows or knock-out panels are regarded as emergency exits.

NOTE: 2 This provision does not apply to a bus or the separate compartment of a motor vehicle in which prisoners are conveyed

6.4 Seats (see also 6.11)

Reject if, subject to a measuring tolerance of 10 mm

a) any seat backrest is of height less than 350 mm, measured from seat level to the highest point, or

b) the gap between the backrest and the seat exceeds 200 mm, or

c) the width of a backrest is less than 340 mm, measured at the widest point, or

d) the height of any seat from the floor or the height from the footrest of such seat to seat level is less than 250 mm, except in the case of a seat positioned over a wheel arch, where no limit applies, or

e) the depth of any seat from the front of the seat to the front of the backrest is less than 340 mm, or

f) the number of seated passengers recorded in the documentation (and on the clearance certificate) exceeds the number that can be seated when the available seating has been calculated at a rate of 400 mm per person, measured at the widest point of the seat, or

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g) where seats face in the same direction, the horizontal distance between the front of the backrests of any such seat and the back of the backrest of the seat in front is less than 570 mm at seat level, or

h) where a seat faces a partition or similar obstruction, the horizontal distance between the front of the backrest and the partition or obstruction is less than 570 mm at seat level, or

i) where seats face one another, the horizontal distance between the backrests is less than 1 200 mm at seat level, or

j) where a seat faces an entrance or has one side opposite an entrance, a rail or partition is not provided between the seat and the entrance, or

k) any seat is not securely fixed, or

l) the drivers seat is not adjustable and does not have a partition behind it.

NOTE: 1 The tolerance of 10 mm for item 6.4 above is in respect of the total dimension for a row of seats, because a row of seats is deemed to be one seat.

6.5 Windows and windscreen

Reject if

a) unless the bus has forced ventilation, every alternate window on each side is not capable of being opened, or

b) any window pane, windscreen or transparent partition is not in a sound, unbroken and clear condition, or

c) a window is capable of being opened in such a manner that a seated passenger is able to put his elbow out of the window.

6.6 Tilt angle

A certificate showing that the tilt angle complies with the relevant requirement in the Traffic and Road Safety Act, issued by the vehicle manufacturer shall be produced.

6.7 Number of standing passengers

Reject if

a) the number of standing passengers recorded in the documentation exceeds that determined by the equation:

$$\frac{A - B}{C}$$

where

A is the total clear floor space, in square metres;

B is the floor space where the roof height is less than 1,7 m plus the floor space of any cross - passageway, in square metres;

C is 0,125 m^2 (the clear floor space, in square metres, that shall be available for each standing passenger), or

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the sum of the number determined above, the number of seated passengers and driver multiplied by 63 kg plus the tare M of the vehicle exceeds the permissible maximum vehicle mass (V), or

there are insufficient hand straps, handrails or grab handles for the permitted number of standing passengers.

6.8 Stairs

Reject if the stairs to the upper deck of a double-deck bus do not have handrails on each side and also a partition or screen on each side of the stairs to prevent any person from slipping off any step.

6.9 Passageways

Reject if

a) there is no unimpeded longitudinal passageway, or

b) there is no cross-passageway from each entrance of the bus to the longitudinal passageway, or

c) such passageways are less than

1. 300 mm wide from floor to seat level, and

2. 350 mm wide above seat level.

6.10 Number of persons that may be carried (see also 6.12)

Reject if the permitted number of persons recorded in the documentation (and on the clearance certificate) exceeds the number of persons (including the driver) obtained by taking the lesser of the totals obtained in (a) and (d) below:

a) Calculation

1. The number of passengers that may be carried = (minimum mass - luggage mass - tare)/63

where

minimum mass is the smallest value of the following three values-.

i) the manufacturer's gross vehicle mass-,

ii) the permissible maximum vehicle mass-, and

iii) the legal limit given in the Traffic and Road Safety Act.

Luggage mass shall take into account the following:

i) luggage distribution:100kg/m^3,and

ii) roof-rack distribution: 75 kg/m^2.

Bodybuilders are required to have available a loading calculation and passenger seating/standing plan to verify the actual axle load distribution. If there is any doubt about the load distribution or calculations, the operator should obtain this information from the bodybuilder or the vehicle testing station should carry out the calculation or require submission of the calculation.

The axle load shall not exceed the minimum value of the manufacturers gross axle load, the permissible maximum axle load and the legal axle load limit given in the Traffic and Road Safety Act and regulations.

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(b) Establish the number of seats in accordance with the method given in 6.4 f).

(c) When relevant, establish the number of standing passengers in accordance with 6.7.

(d) When relevant, add the number of seated persons to the number of standing persons, to obtain the total number of persons that may be carried.

NOTE: In cases of doubt, have the tare verified and assess the permissible maximum vehicle mass, paying particular attention to the tyres.

6.11 Seating on school buses

Reject if

a) any seat backrest is of height less than 300 mm, measured from seat level to the highest point, or

b) the gap between the backrest and the seat exceeds 75 mm, or

c) the width of a backrest is less than 330 mm, measured at the widest point, or

d) the height of any seat from the floor or the height from the footrest of such seat to seat level is less than 300 mm or more than 460 mm, or

e) the depth of any seat from the front of the seat to the front of the backrest is less than 300 mm, or

f) the number of seated passengers recorded in the documentation (and on the clearance certificate) exceeds the number that can be seated when the available seating has been calculated at a rate of 330 mm per person, measured at the widest point of the seat, or

g) where seats face in the same direction, the horizontal distance between the backrests of any two such seats is less than 530 mm at seat level, or

h) where a seat faces a partition or similar obstruction, the horizontal distance between the backrest and the partition or obstruction is less than 530 mm at seat level, or

i) where sots face one another, the horizontal distance between the backrests is less than 1 060 mm at seat level, or

j) any seat is not securely fixed.

6.12 Number of persons that may be carried on a school bus

Reject if the permitted number of persons recorded in the documentation (and on the clearance certificate) exceeds the number of persons (including the driver) obtained by taking the lesser of the totals obtained in (a) and (b) below:

Calculation

1. The number of passengers that may be carried = (minimum mass - luggage mass - tare)/45

   where

   minimum mass is the smallest value of the following three values:

   i) the manufacturers gross vehicle mass;

   ii) the permissible maximum vehicle mass: and

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iii) the legal limit given in the Traffic and Road Safety Act.

Luggage mass shall take into account the following:

i) luggage distribution: 100 kg/m^3, and

ii) roof-rack distribution: 75 kg/m^2.

Bodybuilders are required to have available a loading calculation and passenger seating/standing plan to verify the actual axle load distribution. If there is any doubt about the load distribution or calculations, the operator should obtain this information from the bodybuilder or the vehicle testing station should carry out the calculation or require submission of the calculation.

The axle load shall not exceed the minimum value of the manufacturers gross axle load, and the permissible maximum axle load

b) Establish the number of seats in accordance with the method given in 6.11 (f).

7 Inspection record for buses

Record the results of the following additional inspections in the inspection record:

6.2 sides and roof,

6.3 entrances and exits:

6.4 seats”

6.5 windows and windscreen',

6.6 tilt angle: a copy of the certificate;

6.7 number of standing passengers;

6.8 stairs;

6.9 passageways;

6.10 number of persons that may be carried;

6.11 seating on school buses registered before 1 April 1991; and

6.12 number of persons that may be carried on a school bus

8 Additional rejection criteria for minibuses

8.1 General

The vehicle shall be inspected (where relevant) in regard to each relevant provision of this standard. The vehicle shall be deemed roadworthy in the absence of any listed defect; otherwise it shall be rejected as indicated.

8.2 Sides and roof

Reject if

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a) the sides of the passenger compartment are not enclosed to a height of at least 600 mm above floor level, with material that is durable and weatherproof, or

b) the roof is not weatherproof.

8.3 Entrances and exits

Reject if

a) at least one side passenger entrance to the main passenger compartment is not provided on the left side, or

b) there is any entrance for persons, other than the driver, on the right-hand side of the longitudinal centre-line of a minibus, or

NOTE: In the case of imported vehicles, if there is any door on the right hand side of the longitudinal centreline of the vehicles which can be used as an entrance, the door shall be permanently locked by means other than a key.

an emergency exit is not provided on the right side or in the rear, unless a door which is accessible to passengers is fitted for use by the driver, or

any emergency exit

1. has dimensions of less than 900 mm x 450 mm, or

2. cannot be opened, or pushed out, or knocked out from both inside and outside. or

3. is designed to open inwards, or

4. is so positioned that passengers have to pass through a goods compartment, or

every entrance to, or exit from, a minibus is not fitted with a door or other effective barrier, or

in the base of a minibus that has been converted from a goods vehicle, openings of at least 900 mm x 450 mm are not provided in the absence of entrances and exits referred to above.

NOTE: 1 Escape hatches knockout windows or knockout panels are regarded as emergency exits.

NOTE: 2 This provision does not apply- to a minibus or the separate compartment of a motor vehicle in which prisoners are conveyed.

8.4 Seats

Reject if, subject to a measuring tolerance of 10 mm

a) any seat backrest is of height less than 350 mm, measured from seat level to the highest point, or

b) the gap between the backrest and the seat exceeds 200 mm, or

c) the width of a backrest is less than 340 mm, measured at the widest point, or

d) the height of any seat from the floor or the height from the footrest of such seat to seat level is less than 250 mm, except in the case of a seat positioned over a wheel arch, where no limit applies, or

e) the depth of any seat from the front of the seat to the front of the backrest is less than 340 mm, or

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f) the number of seated passengers recorded in the documentation (and on the clearance certificate) exceeds the number that can be seated when the available seating has been calculated at a rate of 380 mm per person, measured at the widest point of the seat, with the doors closed, or

g) where seats face in the same direction, the horizontal distance between the front of the backrests of any such seat and the back of the backrest of the seat in front is less than 570 mm at seat level, or

h) where a seat faces a partition or similar obstruction, the horizontal distance between the front of the backrest and the partition or obstruction is less than 570 mm at seat level, or

i) where seats face one another, the horizontal distance between the backrests is less than 1 200 mm at seat level, or

j) any seat is not securely fixed.

NOTE: The tolerance of 10 mm for item (f) above is in respect of the total dimension for a row of seats, because a row of seats is deemed to be one seat.

8.5 Windows and windscreen

Reject if

a) unless the minibus has forced ventilation, every alternate window on each side is not capable of being opened, or

b) any window pane, windscreen or transparent partition is not in a sound, unbroken and clear condition.

8.6 Number of persons that may be carried

Reject if the permitted number of persons recorded in the documentation (and on the clearance certificate) exceeds the number of persons (including the driver) obtained in (a) and (b) below:

a) Calculation

1. The number of passengers that may be carried = (minimum mass - luggage mass - tare)/63

   where

   minimum mass is the smallest value of the following three values:

   i) the manufacturer's gross vehicle mass;

   ii) the permissible maximum vehicle mass; and

   iii) the legal limit given in the Traffic and Road Safety Act.

2. Luggage mass shall take into account the following:

   i) luggage distribution: 100 kg/m^3: and

   ii) roof-rack distribution: 75 kg/m^2.

Bodybuilders are required to have available a loading calculation and passenger seating/standing plan to verify the actual axle load distribution. If there is any doubt about the load distribution or calculations, the operator should obtain this information from the bodybuilder or the vehicle testing station should carry out the calculation or require submission of the calculation.

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The axle load shall not exceed the minimum value of the manufacturers gross axle load, the permissible maximum axle load and the legal axle load limit given in the Traffic and Road Safety Act.

b) Establish the number of seats in accordance with the method given in 8.4(f).

NOTE: In cases of doubt, have the tare verified and assess the permissible maximum vehicle mass, paying particular attention to the tyres.

9 Inspection record for minibuses

Record the results of the following additional inspections in the inspection record:

8.2 sides and roof;

8.3 entrances and exits;

8.4 seats;

8.5 windows and windscreen; and

8.6 number of persons that may be carried.

10 Environmental requirements (exhaust emissions testing)

The following environmental requirement tests shall be carried out as specified in Annex A.

10.1 Visual Inspection (all vehicles)

The exhaust shall not emit dense blue or clearly visible black smoke. In exceptional cases, especially on certain vehicles manufactured before 1960, emissions of smoke are unavoidable due to the engine design and, consequently, these vehicles will not fail the test.

10.2 Standard Emissions Test

The concentration of gases in the exhaust shall not exceed the limits in table 8.

Table 8 Emission standards for motor vehicles in Uganda

Category of vehicle	**Standard applicable**						
	Pb	**NO_x**	**SO_2**	**CO**	**PM**	**HC**	**VOCs**
Heavy duty diesel powered vehicles(g/kWh)	-	7.0	-	4.5	0.15	1.23	-
Diesel passenger cars(g/km)	-	1.25	-	4.2	0.08	-	-
Petrol/gasoline passenger cars (g/km)	-	0.08	-	1.0	-	0.10	-
Diesel light duty trucks (g/km)	-	0.38	-	2.6	0.06	0.19	0.19
Petrol/gasoline light duty trucks	-	0.6	-	2.1	-	0.3	-

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Note:

- Due to the low level of marine and locomotive traffic in Uganda, no standards are being proposed until further notice.
- VOCs: Volatile Organic Carbons
- g/kWh: gram per kilowatt-hour
- g/km: gram per kilometre
- Light duty vehicles include cars, vans and light trucks (less than 3.5 metric tons)
- Heavy-duty vehicles include goods vehicles and buses (exceeding 3.5 metric tons) and trains.

10.3 Noise Level Test

The permitted noise levels that a vehicle produces shall not exceed 90 dB (cross check). Where a person is employed as a driver of a PSV vehicle the noise that he is exposed to shall not exceed 90 dB and shall be in conformity with other laid down government regulations in operation. The test procedure shall be as specified in Annex B.

11 Inspection tests and test equipment

11.1 An Inspection Centre shall have the minimum tests and test equipment as specified in US 539.

11.2 The inspection schedule

The inspection schedule for all vehicles shall be in accordance with table 9.

Table 9. — Inspection schedule

Category	Initial Inspection	Periodic Inspection (Frequency)	Modification Inspection	Inspection at transfer of Ownership NB: this is optional	Inspection of Vehicles involved in Accidents	On roads Random Inspection
Heavy duty trucks	All	12 Months	Yes	Yes	Yes	Safety emission
Buses	All	12 Months	Yes	Yes	Yes	Safety emission
Light duty vehicles including passenger cars	All	12 Months	Yes	Yes	Yes	Safety emission
Taxis	All	12 Months	Yes	Yes	Yes	Safety emission
Motorised tricycles	All	12 Months	Yes	Yes	Yes	Safety emission

5.2.1 The Types of Inspection

11.2.1.1 Initial Inspection

This shall be an inspection that a used vehicle being imported into the country must receive when it is to be newly registered.

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NOTE: New private passenger cars shall be subject to an initial inspection and thereafter be subjected to a periodic inspection after every twelve months (one year duration).

11.2.1.2 Periodic inspection

This shall be an inspection that a motor vehicle must receive when it is to be operated continually after the term of validity of the motor vehicle inspection certificate has expired.

11.2.1.3 Modification inspection

This shall be an inspection that a motor vehicle must receive when there are changes in the length, height, width, maximum payload and other major specifications.

11.2.1.4 Inspection of vehicles involved in traffic accidents

This shall be an inspection that a motor vehicle must receive when it is damaged by traffic accidents.

11.2.1.5 On-roads random inspection

This shall be an inspection that a motor vehicle must receive when it is picked up at random on the road.

12 Criteria of conformity

12.1 For a vehicle to be registered for use it shall be required to have the following:

12.1.1 A certificate of roadworthiness from a recognised agency of the exporting country.

12.1.2 A vehicle inspection report from an authorised Vehicle Inspection Centre.

12.2 Prohibition of Vehicle

The classification for defects shall be as per authorised manuals and shall be as follows:

12.2.1 IM Immediate prohibition

12.2.2 D Delayed prohibition (10 days)

12.2.3 AD Advisory defects

12.3 All vehicles which fail the inspection test shall be deemed to require repair at the cost of 'the owner and will be denied renewal of road license or insurance.

12.4 A certificate of roadworthiness shall be issued only after a vehicle has undergone inspection and has been found to have no severe defects.

13 Marking

Each road vehicle shall conform to ISO 3780. Road vehicles - World manufacturer identifier (WMI) code and ISO 3779, Road Vehicles - Vehicle identification number (VIN).

14 Packing

Each imported vehicle shall be protected from corrosion by applying a suitable anti-corrosive agent to last for a minimum three-month period while in transit at sea.

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Annex A
(normative)

Environmental requirements (Exhaust emission inspection)

A.1 Inspection procedure for petrol powered vehicles

A.1.1 Visual Inspection (all vehicles)

Once the preliminary checks have been completed, the inspector will raise the engine speed to around 2 500 rpm, or half the maximum engine speed if this is lower. The engine speed will be held steady for about 20 seconds then the engine will be allowed to return to its natural idle speed. Once the emissions have stabilised the inspector will assess the smoke emitted from the tailpipe. If the exhaust is emitting dense blue or clearly visible black smoke then the vehicle will fail the test. In exceptional cases, especially on certain vehicles manufactured before 1960, emissions of smoke are unavoidable due to the engine design and, consequently, these vehicles will not fail the inspection.

A.1.2 Standard Emissions Inspection

Vehicle emissions will also be checked using an approved analyser. After completing the visual inspection, the inspector will use the analyser to assess the concentration of carbon monoxide (CO) and hydrocarbons (HC) in the exhaust gases by inserting a sample probe into the exhaust tailpipe. The inspector is carried out with the engine at its normal idling speed and the analyser displays the results continuously. Once a stabilised figure is achieved the inspector will record the result.

The vehicle must comply with the emissions limits set out in Tables 8.

HC is normally measured during the natural idle test. However if a vehicle meets the CO limit but exceeds the HC limit at this speed, the inspector must carry out further inspection at 2,500 rpm. Provided the HC limit is met at this higher speed then the vehicle meets the requirement.

ppm refers to `parts per million' which is how MOT meters display the result.

A.2 Test procedure for diesel powered vehicles

A.2.1 Vehicles to be tested

This inspection shall apply to all diesel powered vehicles with four or more wheels.

A.2.2 Checks on the Vehicle before the Test

As a general precaution motorists and vehicle operators are advised to check that the vehicle has enough engine oil, the coolant level is correctly topped-up, and there is enough fuel to carry out the inspection. If defects are known or suspected before the inspection is carried out then it is advisable to seek advice from a qualified service engineer and have the defects rectified well in advance of the inspection appointment.

Wherever possible vehicles should arrive at the inspection station with the engine at its normal operating temperature (i.e. after a drive of around 8 kilometres).

Before carrying out the inspection for cars and light goods vehicles the inspector must confirm that the engine is at its normal operating temperature. In most cases, this will require the use of a temperature probe inserted into the dipstick tube. The inspector will also check that the engine has adequate oil and fuel to complete the

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inspection procedure before proceeding. In addition, the inspector will check the condition of the camshaft drive belt (where visible) and the fuel injection pump (governor) anti-tampering seals.

For vehicles with manual transmission the inspection should be carried out with the gear lever in the 'neutral' position and with the clutch engaged. For vehicles with automatic transmission the gear selector should be in either the 'neutral' or 'parking' position.

A.2.3 Inspection procedure

A.2.3.1 All private cars and light goods vehicles (< 3 500 kg)

A.2.3.1.1 Visual inspection

For vehicles first used before 1st August 1979, a visual inspection shall be carried out.

The inspector will check the smoke emissions by raising the engine speed to around 2 500 rpm or half the maximum engine speed if this is lower. Once this speed has been reached and the engine stabilised for 20 seconds, the inspector will then allow the engine to return to idle. After letting the engine stabilise at this speed, the inspector will assess the emissions from the exhaust tailpipe. If the exhaust is emitting dense blue or clearly visible black smoke for a period of 5 seconds or more then the vehicle will have failed the inspection. However, vehicles manufactured before 1960, will not be failed if the smoke is unavoidable due to the engine design.

A.2.3.1.2 Metered smoke test

For vehicles first used on or after 1st August 1979, a metered smoke test shall be carried out. Before checking the smoke emission the tester will first ensure that the engine speed governor is functioning by increasing the engine speed to around 2 500 rpm or half the maximum engine speed if this lower. Upon reaching this speed, the tester will hold the engine speed steady for 20 seconds then the engine speed will be slowly increased to check the operation of the fuel pump governor. Where the engine speed stabilises at its maximum speed, indicating that the governor is not working, the engine should be returned to idle speed. Where it is clear that the governor is not working, the engine should be returned to idle speed and stopped, the smoke test will not be carried out and the tester will be unable to pass the vehicle.

Provided that the preliminary checks are completed satisfactorily, the tester will next prepare the smoke meter and insert the sampling probe to the exhaust pipe.

Having re-started the engine the tester will start the smoke test. The smoke meter will indicate to the tester when to accelerate the engine and after 2 seconds have elapsed it will display a message telling the tester to release the throttle. The meter will calculate the maximum smoke emission during the acceleration and display the result. A further two accelerations will be requested by the meter.

Provided that the average of the 3 tests is on or below the appropriate limit, and the three results are within a certain tolerance of each other, then the vehicle will have passed the test. The tester will stop the engine and remove the smoke meter probe from the tailpipe.

Where the average smoke emission at the end of the third acceleration exceeds the limit then the meter will request further tests until either the average of the three preceding accelerations is on or below the limit or a maximum of six accelerations have been completed. In either case the tester will stop the test and remove the probe from the exhaust tailpipe.

As a final check the tester will assess visually whether the smoke emitted from the exhaust, regardless of measured smoke density is likely to obscure the vision of other road users. If it is likely to do so, in the tester's opinion, then the vehicle will fail the test.

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Annex B
(informative)

Inspection procedure for noise emitted by road vehicles

B.1 The vehicle shall be driven unladen and shall approach Line AA (see Figure 5) at a steady road speed which corresponds to the engine speed of three quarters of the revolutions per minute at which (according to manufacturer) the engine develops its maximum power, under such gear ratio (excluding first gear in the case of vehicles fitted with more than three forward gears) that the road speed approaches 50 km/h as closely as possible. When the front of the vehicle reaches the position in relation to the microphone, shown as AA in Figure 5, the throttle shall be fully opened as rapidly as practicable and held there until the rear of the vehicle reaches the position BB in Figure 5, when the throttle shall be closed as rapidly as possible. This test shall be repeated with the vehicle travelling in the opposite direction.

B.1.1 Trailers, including the trailer portion or articulated vehicles, shall be ignored when considering the crossing of Line BB.

B.1.2 If the vehicle is fitted with more than two wheel drives, it shall be used in the drive, which is intended for normal road use.

B1.3 If the vehicle is specially constructed with equipment (such as concrete mixers, compressors, pumps, etc.) which is used whilst the vehicle is in normal services on the road, the equipment should also be operating during the inspection.

B.2 In the case of agricultural tractors, self-propelled agricultural machines, and motor cultivators, the vehicle shall approach Line AA (see Figure 5) at a steady speed of three quarters of the maximum speed which can be achieved using the gearbox ratio which gives the highest road speed.

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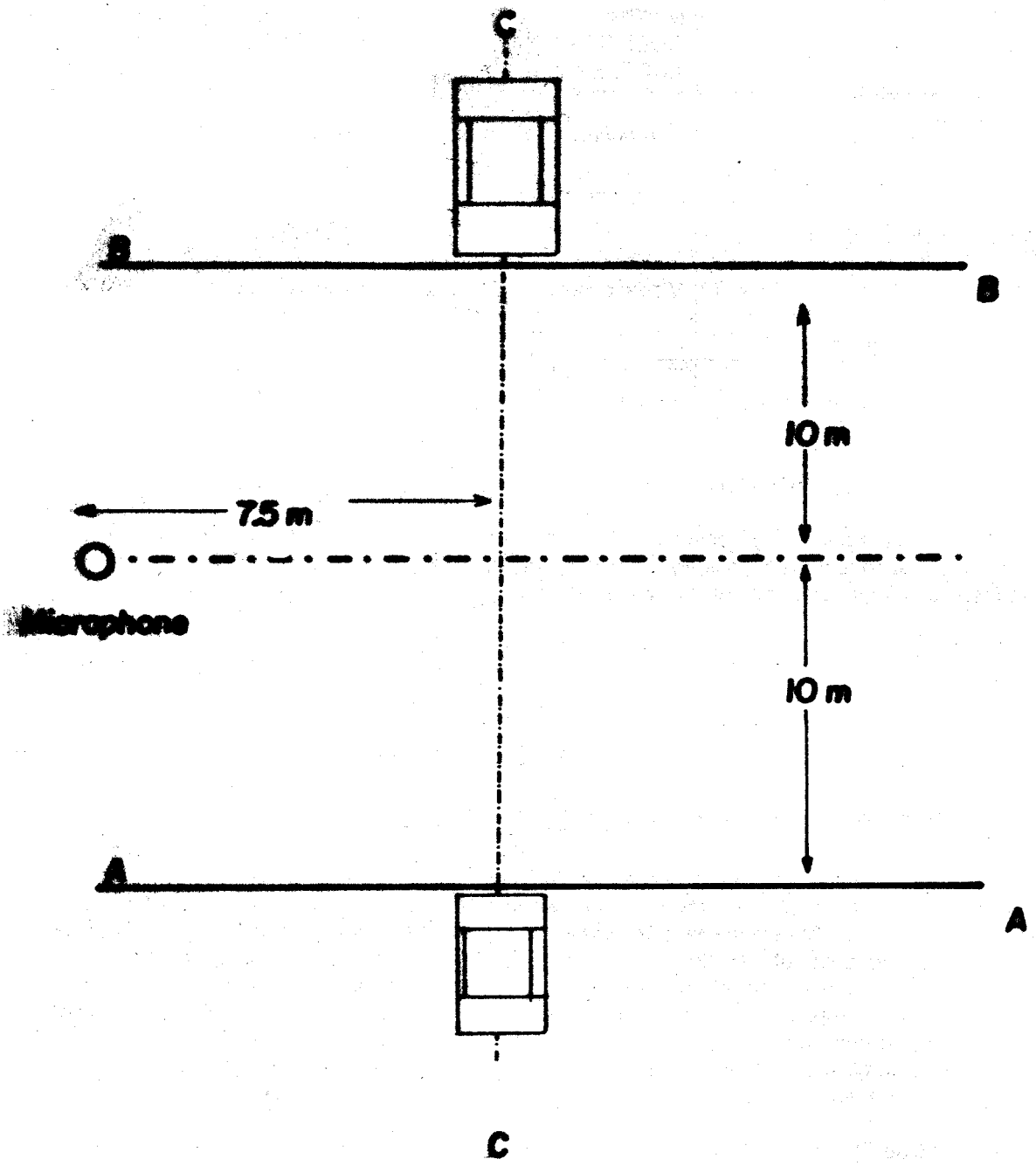

FIG. 1 — MEASURING POSITIONS FOR MEASUREMENTS WITH VARIOUS VEHICLES IN MOTION.

Figure 5 — Measuring position for measurements with various vehicles in motion.

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Annex c

Preliminary inspection check list for roadworthiness

Stage 1. Body work (external and internal)

Items	AD Advisory defects	D Delayed prohibition	IM Immediate prohibition
Overall conditions			
Condition of paint			
Doors			
Windows			
Sunroof			
External mirrors			
Glasses			
Wipers and washers			
Seats			
Trim			
Safety belts			
Steering wheel			
Brake pedal			
Clutch pedal			
Parking brake lever			
Headlights			
Parking lights			
Direction indicators			
Reverse lights			
Courtesy light			
Rear number plate light			
Stop lights			
Front bumper			
Rear bumper			
Roof rack			
Antenna			

Stage 2. Condition of engine components (static), Engine compartment and boot

Items	AD Advisory defects	D Delayed prohibition	IM Immediate prohibition
Bonnet			
Engine			
Battery			

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Battery carrier			
Wiring harness			
Starter motor			
Alternator/Generator			
Radiator			
Radiator hoses			
Water pump			
Carburettor			
High tension cables			
A/C condenser			
Power steering			
Brakes master cylinder			
Clutch master cylinder			
Brake steel pipes			
Fuel pipes			
Flexible brake pipes			
Windscreen washer bottle			
Boot lid			
Jack and handle			
Wheel wrench			
Tool – kit			
Life saver			

Stage 3. Engine functioning (running state)

Items	Remarks
Radiator water	
Engine oil	
Starting of engine	
Idle speed noises	
High speed noises	
Oil leaks	
Water leaks	
Cooling system function	
Engine oil pressure	
Charging system	
A/C operation	
Power steering operation	
Fuel pump	
Vacuum pump	
Engine stopper (diesel)	
Exhaust emission	

Stage 4. (on pit) Under body inspection

Items	Remarks

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Laminated leaf springs	
U – bolts	
Spring bushes	
Spring pins	
Coil springs	
Front shock absorbers	
Rear shock absorbers	
Sub – frame mountings	
Engine mountings	
Gearbox mountings	
Stabiliser bar bushes	
Fuel tank	
Fuel lines	
Brake lines	
Exhaust system	
Transmission	
Steering box/rack	
Chassis	
Mono – block body	
Front sub – frame	
Rear sub – frame	
Front axle	
Rear axle	
2nd rear axle (where fitted)	
Wheel geometry	

Tyres.

Location	Size	Wear pattern	Tread depth	Wheel rims
FR Left				
FR Right				
RR Left inner				
RR Left outer				
RR Right inner				
RR Right outer				
Spare wheel				
Remarks				

Stage 5. (on pit) Steering suspensions, Final drive

Items	Remarks
King – pin bushes	
Ball – joints	
Steering linkages	
Brake discs	
Calipers	

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Front brake pipes	
Brake pad life	
Brake drums	
Wheel cylinders	
Rear oil seals	
Rear brake pipes	
Front L.H. driving shaft	
Front R.H driving shaft	
Front differential	
Rear differential	
Transfer case	
Front propeller shaft	
Centre bearing	
Front oil seals	
Rear L.H. drive shaft	
Rear R.H. drive shaft	
Hand brake cables	

Stage 6. Test drive

Items	Remarks
Driving seat adjustments	
Driving performances	
Emergency brake	
Clutch performance	
Gear shift	
Steering stability	
Front suspension	
Gauges and instruments	
Odometer	
Heater	
Defroster	
Air – con	
Windscreen wipers	
Washers	
Horn	
Wheel alignment	
Parking brake	
Rear suspension	

Recommendations

1. Approved for use on Ugandan roads ☐
2. To undergo corrective repairs ☐
3. Reject ☐

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